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ABSTRACT

The papers in this compendium center on adult/community college education and the alternatives that will be presented to faculty, institutions, and communities during the 1980s. In "Working Effectively with Adults: What Research and Practice Tell Us," Mark Rossman discusses the adult learner's physiological changes, mental abilities, psychological factors affecting adult learning, and the adult orientation to learning. John Niemi gives examples of cultural differences, especially in relation to minority groups, and their implications for adult education, in "Cross-Cultural Considerations in Adult Education." The development of inservice teacher education to meet certification needs, professional growth needs, and leadership dimensions is the topic of Richard Rounds in "The Professional Development Plan (PDP) at the Albuquerque Technical-Vocational Institute." In "The Reentry Woman in Higher Education," Dolores Hentschel reviews the history of this movement, shares research-based generalizations about the women who are the participants, examines implications, and raises questions about practices. Finally, Daniel J. Timko offers practical methods of teaching adults in "A Practitioner's View of Improving Instruction in Adult Vocational and Technical Instruction." (KC)

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ALTERNATIVES FOR THE 80's

A compendium of lectures and
resource documents from an
institute in Adult Education at
the University of New Mexico

S. Gregory Bowes
University of New Mexico
Editor

Department of Secondary and Adult Teacher Education

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INTRODUCTION

During the spring semester of 1980 a week-long institute organized around the theme "Alternatives for the 80's" was held by the University of New Mexico. This program was developed to allow practitioners and graduate students in adult education an opportunity to participate in lecture/workshop sessions with noted resource persons. Topics centered on a variety of areas relating to adult/community college education and the alternatives that will be presented to faculty, institutions and communities during the next decade.

In addition to the lecture material contained herein, workshop sessions during the institute dealt with topics such as mass media, innovative program development, teacher skills, and exemplary community services. All of the lecture sessions were videotaped for subsequent use in staff development activities for adult educators within the state of New Mexico.

The Department of Secondary and Adult Teacher Education was able to conduct this institute because of unusual support from two key sources. The Albuquerque Technical-Vocational Institute gave leadership in program planning and also provided its exceptional facilities as the site for the entire week's activities. The program costs were borne by a contract with the New Mexico Board of Educational Finance - Commission on Postsecondary Education through funds provided by Title I of the Higher Education Act.

This writer acknowledges the efforts of many people in coordinating the institute and in editing the papers contained herein. The contributions of Richard Rounds and Thomas Wilson in finalizing the program, of Margaret Brown for day-to-day arrangements and of Elizabeth Thompson for manuscript editing are greatly appreciated. Their assistance made the entire project run smoothly.

Finally, sincere gratitude and professional indebtedness is extended to each of the five resource persons. Their thorough preparation and excellent lecture/workshop sessions were the key to a successful institute. These efforts continue the tradition of quality programming which began in 1979 with the initial Lecture/Seminar Series in Adult Education at the University of New Mexico.

S. Gregory Bowes

Dr. Mark Rossman, Associate Professor, Center for Higher and Adult Education
Arizona State University

"Working Effectively with Adults: What Research and Practice Tell Us"

I am delighted to be able to be here this evening and to be able to participate as the initial speaker in this year's series of lectures and seminars in Adult and Community College Education here at The University of New Mexico. Knowing those who participated last year as well as many of this year's guest lecturers, I am deeply honored to be invited. I hope that my remarks will be helpful in creating more effective adult educators or as J. R. Kidd frequently calls us--adult educationists.

A number of years ago, I discovered, in The Works of John Dewey, a wonderful plan for presenting information to adults--Preview, Do and Review. I have found that this is a very effective plan to use as it puts into practice much of the theory of adult learning. With that in mind, I would like to tell you what I intend to do tonight, do it and then leave some time, either at the end of my remarks or tomorrow morning, for review.

I would like to share with you my understanding of what the research says about adult learning and its application. Particularly, I will confine my remarks to physiological changes in the adult learner, mental abilities of the adult learner, psychological factors affecting adult learning and the adult orientation to learning.

Having shared the "preview" but before I give the "do," I would like to digress for a moment. I have found that in my own practice with adults, the adult's learning must be guided or facilitated in order for it to be most effective. Most of the speakers at last year's sessions spoke about this, so I refer you to the proceedings that Greg Bowes edited, for further information. In order to guide your learning this evening, I would like you to take about 10 minutes to complete the questionnaire that I have provided. Its purpose is twofold: 1) to help you to follow along with my remarks and 2) to serve as a diagnostic tool for assessing your own knowledge regarding selected characteristics of the adult learner.

Hopefully, a David Ausubel might say, I have provided enough "advance organizers" so that the efficiency of your information processing capacities to meaningfully absorb and relate knowledge has been increased. I hope so.

The physiological condition of the learner exerts a significant influence on learning that is often poorly understood and ignored by both the adult learner and the adult educator. Nearly every adult experiences some kind of physical disability that may be the source of some learning difficulty. This may result from an inherited characteristic, from injury or disease, from inadequate nutrition, or from the natural process of aging.

From whatever source it may arise, the physiological condition of the learner will affect learning and performance in a number of ways that need to be examined (Verner and Davison, 1971:1).

The following physiological areas will be discussed in this section: vision, audition, and reaction time.

Adults with normal physiological characteristics depend more upon vision in learning than upon any other of the senses. It is estimated that some 85 percent of all learning occurs through vision. Although the life span of the eye exceeds life expectancy, there is a steady decrease in the average efficiency of visual functions with advancing age, even in otherwise healthy eyes. As a result, the percentage of the population with defective vision shows a sharp increase from 23 percent at age twenty to 95 percent at seventy years of age (see Table 1) (Verner and Davison, 1971: 6).

Visual acuity.--The primary measurement that reflects the efficacy of vision is the measurement of visual acuity (Geist, 1968; Birren, 1964). Studies have indicated that visual acuity attains its maximum at about eighteen to twenty years of age (Florida Department of Education, 1973, Knox, 1977:280). The near point of vision begins to move away from the eye after ten years of age, and the most striking change occurs between forty-five and fifty-five years of age (Verner and Davison, 1971:7).

The decrease in vision after, or at least beginning at, age forty appears to reflect changes in at least four different factors: pupil diameter, decreased ability to adapt to the dark, increased sensitivity to glare, and yellowing of the lens (Bischof, 1976:104-5).

Pupil diameter.--The pupil size of the eye tends to diminish with age, thus reducing the amount of light reaching the retina. Perhaps the most sensitive indicator of the efficiency of the visual system is shown by the minimum light threshold of the fully dark-adapted eye (Birren, 1964; Troll, 1975).

Dark adaptation.--Dark adaptation is the phenomenon wherein there is an increase in visual sensitivity after remaining in the dark. It has been repeatedly demonstrated that the dark-adaptation threshold increases with age (Birren and Shock, 1950; McFarland and Fisher, 1955; Domey, McFarland, and Chadwick, 1960; Botwinick, 1973: 122).

Illumination.--It is possible to compensate for the changes in pupil size by increasing the amount of external illumination. For a normal learning task an adult at age twenty requires 100 watts of illumination, but by age fifty 180 watts are required for the same task to compensate for pupillary changes (see Table 2) (Verner and Davison, 1971:9).

In a study by Guth et al. (1956) on the lighting requirements of older workers, each subject whose eyes were corrected for refractive errors attempted to read 10 seven-letter words under different conditions of illumination. Results indicated that as one ages greater illumination is needed to obtain equal visual recognition.

Contrast.--Another important aspect of illumination is the matter of contrast. The learning task or stimulus must be set apart from its background so that it stands out as separate and distinct from its surroundings. Contrast has a pronounced effect upon the speed of reading, and reading is reduced significantly when the words being read are not in sharp contrast with the paper on which they appear (Verner and Davison, 1971). Weiss (1959) indicated that there is evidence showing that contrast sensitivity declines with age.

Also, loss in the accommodation function of the eye (ability to see clearly objects both far and near) begins at about age six and constantly decreases until about age sixty, after which it levels off until extreme old age (Bischof, 1976:105). This

occurs due to loss of elasticity of the lenses of the eye, causing the older lens to have a more fixed focus, with reduced ability to adjust to objects close to the eye (Botwinick, 1973:121; Birren, 1964:89).

Color vision.--There are some definite changes with age insofar as color vision is concerned (Geist, 1968: Dickinson, 1973; Botwinick, 1973). After age thirty-five, more blue light is needed to get a sensation of blue. This loss of yellow-blue discrimination diminishes as one moves toward the red end of the spectrum. Thus, after age thirty-five, learning tasks involving color will need to use strong rather than subtle tints (Gilbert, 1957; Birren, 1959).

Questionnaire construction.--The following questions were derived from the section on vision:

20. For normal learning tasks an adult by age 30 requires 120 watts of illumination while by age 50 180 watts are required. /True/
23. Visual acuity attains its maximum at about 18 years of age. /True/
24. With advancing age the lens loses its elasticity and cannot focus readily. /True/
25. A major change in visual acuity occurs between age 50 and 60. /False/
26. About 85% of all learning occurs through the use of the eyes. /True/

Having briefly discussed the characteristics of vision and some possible implications, let's now direct our attention to the area of hearing and how it affects adult learning.

In no capacity except sight are there greater changes at different stages in life than in hearing acuity. In most people the peak of performance seems to be reached before the fifteenth birthday, and there is gradual but consistent decline until about sixty-five (Kidd, 1973; Florida Department of Education, 1973; Kimmel, 1974; Knox, 1977).

In addition to the loss of hearing efficiency as age progresses, there is also a slowing of the central auditory processes. We slow up on our response to auditory stimuli as we age, and for this reason many aged individuals find it difficult to follow rapid speech in spite of little or no hearing loss (Hand, 1973).

The prevalence of impaired hearing is quite marked at the upper age levels. Beasley showed that the average hearing loss showed a marked increase past the age of forty-five and continued to increase rapidly thereafter (Geist, 1968:68; Birren, 1964).

Sound frequencies.--The hearing loss in old age is not equal across all frequencies of sound. High-pitch tones are progressively less audible for the elderly (Kryter, 1960; Spoor, 1967). It appears that most individuals above the age of forty will show some loss of high-tone perception. Also there is a somewhat greater tendency for men to show impaired hearing then for women (Birren, 1964; Geist, 1968; Botwinick, 1973).

Discrimination.--The normal process of aging produces hearing loss due to physiological changes in the ear that result in reduced ability to discriminate among sounds, causing impairment in speech discrimination (Melrose, Welsh, and Luterman, 1963; Verner and Davison, 1971:13). Konig (1957) found that between ages twenty-five and fifty-five discrimination decreased slightly, but after fifty-five the decrease was marked. To compensate for normal hearing loss in an adult learning situation, it is

important for the instructor to speak slowly and distinctly and with sufficient volume. Since loss of hearing reduces the ability to recall long sentences, an instructor should use short sentences--especially when giving directions for learning (Verner and Davison, 1971:13). This is especially important when dealing with individuals suffering a hearing loss, as the inability to hear can produce emotional disturbances such as fear, insecurity, and the inability to learn new concepts (Florida Department of Education, 1973:6).

Questionnaire construction.--The following questions were derived from this section on audition:

16. Maximum auditory acuity is attained between 10 and 15 years of age. /True/
17. In the aging process, there is a loss of auditory acuity on the high tones. /True/
18. Loss of hearing reduces the ability to recall long sentences. /True/
19. Many older adults find it difficult to follow rapid speech in spite of little or no hearing loss. /True/
21. After age 15 there is a gradual, but consistent decline in hearing to about 65 years of age. /True/
22. The inability to hear can produce emotional disturbances such as depression, anxiety, or frustration. /True/
28. There is a somewhat greater tendency for women to show impaired hearing than for men. /False/
29. As we age, we slow up in our reaction to auditory stimuli. /True/

In addition to the reduction of sensual acuity, studies indicate that one effect of aging (in the absence of disease) is a slowing of reaction time, regardless of the sensory modality and regardless of the muscle used for the response (Kimmel, 1973: 367). Beginning as early as 1884, with the data collected by Galton, reaction speed was found to increase from early childhood to the twenties and thirties and to have a fairly significant decline beyond the forties. The decline in the reaction speed after age thirty was confirmed by the research of Miles, Bellis, and others (Lorge, 1963:2). Birren (1964) indicates that relative to other skills rapid reaction time appears to mature early. The figures suggest that reaction time reaches its minimum around age eighteen.

Botwinick and Kornetsky (1960) compared the skin responses of older and younger adults to an electric shock and to a pleasant musical tone. The skins of the older group responded to the shock less quickly than the skins of the younger group and also responded less quickly to the tone.

The generalized slowness of behavior in older persons is looked upon as being most probably an expression of a primary process of aging in the nervous system (Birren, 1964; Kimmel, 1973).

At the same time that performance is being altered by physiological changes, it is also being affected by the emotional response of an adult to physiological change. Thus, physical changes often are accentuated by the emotional state they induce. As an adult becomes less confident of his own ability, he may take longer to perform familiar tasks than his physiological state alone would require. Some adults might respond to a decrease in the ability to perform efficiently by increased motivation and determination to compensate for the loss, while others may become depressed and discouraged to the point that their performance falls far below the potential of their actual physical state (Verner and Davison, 1971:21).

The following questionnaire items were derived from this section on reaction time:

27. Speed of reaction time tends to decline with age. /True/
30. Speed of performance does not decline with age. /False/

Try as we may, we cannot circumvent the physiological aging process. I'm sorry to report that there is no "fountain of youth." We will age no matter how we try to avoid it. Before we all walk away feeling absolutely useless and decrepit, let's take a look at the relationship of mental abilities and its role on adult learning.

The literature on abilities and aging contains four major areas bearing on the adult years: first, decline vs. growth in intellectual functioning with increasing age; second, speed vs. power as a measure of intellectual ability; third, the changing patterns of mental abilities with increasing age; and fourth, the relationship between education and intellectual ability.

According to Birren (1973:151-52), the problem of the criteria of adult intelligence has been notably neglected. Most intelligence tests and measures of intellectual ability in adults have been adapted from measures used with children or young adults. Implicit in the use of intelligence tests based on those of children is the notion that intelligence is related to school achievement. This is not a satisfactory situation, and a number of criteria might be posed against which to test the validity of our concepts and measurements of adult intelligence. Measures of intellectual function might be related to: (1) longevity; (2) occupation; (3) susceptibility to certain diseases, e.g., cardiovascular disease; (4) anatomic localization of behavior deficits associated with brain damage in later life; and (5) correlation with personality. It is also important to explore sex differences in relation to development and aging of the intellect.

Adult performance on intelligence tests calls for certain attributes, such as being motivated, persisting in the task, cooperating with the psychometrist, and certainly having some comfortable familiarity with the test items (Bischof, 1969:214).

The greatest impact of age is felt by adults in the middle years of the thirties and forties, for it is at this time that the cumulative effects of aging begin to become obvious. Consciousness of age alters an adult's expectations of himself and his future so that involvement in learning is usually modified. This may be noticeable particularly with respect to motivation and to his measures of achievement (Verner and Davison, 1971:2).

One of the most significant problems in assessing an adult's intellectual ability is the degree to which information has been obtained from cross-sectional rather than longitudinal studies. In cross-sectional studies, people who differ in age also differ in generation. This means that any measured differences in intelligence quotient could reflect either age or generation differences, or both (Troll, 1975; Botwinick, 1973; Arenberg, 1973). Baltes and Schaie (1974) believe the reasons for generational differences in intelligence lie in the substance, method, and length of education received by different generations.

The decline in intellectual functioning with increasing age intimated by cross-sectional data (Jones and Conrad, 1933; Miles, 1955; Wechsler, 1955) has not been supported by longitudinal studies which indicate continued growth into middle age. For example, Owens (1953) published a report of a longitudinal study of age changes in mental abilities. The subjects were 127 male freshmen of 1919 who had originally taken Army Alpha, Form 6, as an entrance examination at Iowa State University. They

were retested during 1949-1950 with the identical examination. Results obtained indicated a substantial and significant increment in test scores over the years.

In 1961, Owens (1966) retested 96 subjects first tested in 1919 and again in 1950 with the Army Alpha, at an average age of sixty-one. The 96 subjects represented a 75 percent sample of the 127 first retested during 1950. Results obtained indicated that the decade from age fifty through age sixty was one of relative constancy in mental ability test performances for the subjects. Contrary to expectation, aging did not seem to have increased either individual or trait differences among the testees of 1961. Clearly, however, major components of the pattern of living of these subjects have served as moderators of the relationship between age and mental ability.

Bayley and Oden (1955) conducted a study in which a test designed to measure superior intelligence was administered twice, about twelve years apart, to 1,103 adults. Of these, 768 were selected as children by Terman for inclusion in the Stanford Study of Gifted Children. The other 335 were spouses of subjects in the Terman study. There was a highly significant increase in scores at the second testing both by the subjects of the gifted study and by the husbands and wives. The retest of this large group of superior adults gave strong evidence that intelligence of the type tested by the concept mastery scale continues at least through fifty years of age.

In 1956, Warner Schaie launched a major project to resolve the discrepancy between cross-sectional and longitudinal studies. Five hundred subjects, ranging in age from twenty-one to seventy, received two intelligence tests: Thurstone and Thurstone's Primary Mental Abilities, and Schaie's Test of Behavioral Rigidity. Seven years later, Schaie and Baltes retested 301 of the subjects with the same tests. The tests they used yielded thirteen separate measures of cognitive functioning. Using factor-analysis methods, they found that the scores reflected four general, fairly independent dimensions of intelligence: (1) crystallized intelligence, (2) cognitive flexibility, (3) visuomotor flexibility, and (4) visualization. When the data were analyzed cross-sectionally, the conventional pattern of early, systematic decline was evident, but when the data were analyzed longitudinally, there was a definite decline on only one of the four measures--visuomotor flexibility.

There is no strong age-related change in cognitive flexibility. For the most important dimension, crystallized intelligence, and for visualization as well, there is a systematic increase in scores for the various age groups, right into old age. Even people over seventy improved from the first testing to the second.

Terminal drop.--Klaus and Ruth Riegel, psychologists at the University of Michigan, have recently suggested that when intellectual decline does occur it comes shortly before death. In 1956, Riegels gave intelligence tests to 380 German men and women between the ages of fifty-five and seventy-five. Five years later they retested 202 of them. Some of the remaining had died, and others refused to be retested. When the Riegels looked back at the 1956 test scores of the subjects who had died, they discovered, on the average, that the deceased subjects had scored lower than those who survived.

The Riegels followed up their study in 1966 by inquiring into the fate of the people retested in 1961. Again, some people had died in the interim, and those who had died had had lower scores than those who had lived. Furthermore, people who had died since 1961 had declined in scores from the first test session in 1956 to the second in 1961. These results pointed to a sudden deterioration during the five or fewer years immediately prior to natural death, or what the Riegels called a

"terminal drop."

The Riegels' results may offer an alternative explanation for the general decline found by cross-sectional studies: the older groups may contain a higher percentage of people in the terminal drop stage, and their lower scores would not be typical of the older people (Baltes and Schaie, 1974).

The following questionnaire items were derived from this section on decline vs. growth in intellectual functioning:

33. Age in itself does little to affect an individual's power to learn or to think. /True/
41. The natural course of aging does not include cognitive decline. /True/
42. Motivation of the adult taking a test is a major factor in performance. /True/
44. The most critical years in the aging process occur between the 50th and 70th years. /False/

Thorndike et al. (1928) conducted comprehensive studies of adult learning to report the facts concerning changes in the amount and changes in the nature of the ability to learn from about age fifteen to about age forty-five, and especially from age twenty-five to age forty-five. They carried on three extensive series of experiments, each including two hundred or more learners and covering long periods of learning. The first concerned learning to read, write, and compute, covering a range of intellect from near the average to very low levels. The second concerned learning of typical high school subjects such as algebra, English, civics, and biology, covering a range of from near average to very high levels. The third concerned learning typewriting and stenography, covering a range of intellect from near the average to very high levels. Intensive experiments in learning to write with the wrong hand, to typewrite, and to understand the artificial language Esperanto were also conducted.

The results of these experiments are as follows: (1) on the average, at the present time, individuals probably learn much less per year from age twenty-five to forty-five than they did from age five to twenty-five; (2) the decline from the acme of ability to learn (located probably between ages twenty and twenty-five) to about forty-two is only about 13 to 15 percent for a representative group of abilities; (3) the influence of the intellect upon the curve of ability to learn in relation to age is slight.

Based on their data, Thorndike et al. made the following points: (1) in general, nobody under forty-five should restrain himself from trying to learn anything because of a belief or fear that he is too old to be able to learn; (2) age, in itself, is a minor factor in either success or failure. Capacity, interest, energy, and time are the essentials. Thus, in their use of the concept of amount per hour, Thorndike et al. clearly distinguish between learning rate as efficiency or as performance and learning ability as power or potential.

The following questionnaire items were derived from this section on Thorndike's study:

35. Compared to youth, adults usually require longer time to perform learning tasks. /True/
40. Age influences the speed of learning. /True/

Speed vs. power.--Lorge (1963) indicates that a problem stemming from the Thorndike curve is that it is based upon tests that stress and emphasize speed of response. If decrements in speed, in seeing, and in hearing do characterize aging, then the evaluation of learning ability and of intelligence must consider the abilities as abilities and not in terms of losses in performance.

In order to determine the relationship between age and various tests of mental ability Lorge (1936) administered tests to a group of 143 adults ranging in age from twenty through seventy. He gave five intelligence tests, all timed, and the Institute of Educational Research Intelligence Scale CAVD, a test of intellectual power with no time limitations. On the timed tests the scores declined as the age of the group advanced. The average scores of the two older groups were, respectively, 15 to 25 percent below those of the youngest. On the CAVD, the scores were almost identical, with less than 0.1 percent difference between the group twenty to twenty-five years old and the two older groups, which were equal.

In the conclusion to this study, Lorge maintained that contaminating power with speed measurements among older subjects obscures the true relationship of intellectual power to age; the inference of mental decline is an unfortunate libel upon adults.

Work by Canestrari (1963), Arenberg (1965), and Eisdorfer (1965) supports the hypothesis that the aged show decreased deficit in learning ability when such noncognitive factors as speed and anxiety are reduced or eliminated. Their subjects did not learn as well as younger age groups, but the quality of their performance increased significantly (Jarvik, Eisdorfer, and Blum, 1973:61).

Pattern of mental abilities.—As better intelligence tests became available, researchers began to realize that different intellectual measures might show different rates of decline (Birren, 1964; Arenberg, 1973; Jarvik, Eisdorfer, and Blum, 1973; Botwinick, 1973).

Eichorn (1973), reporting on subtest results from the Wechsler-Bellevue and the WAIS administered to members in the Berkeley Growth Study, found that the subtests which "hold up" are "Vocabulary" and "Information." Both subtests showed gains in both sexes through age thirty-six.

Other studies (Bilash and Zubek, 1960; Owens, 1966; Foulds and Raven, 1948) reported that scores in perceptual and dexterity tests declined from the teens to the seventies, whereas other test scores--i.e., verbal fluency and comprehension--held up until the mid-forties. Honzik and Macfarlane (1973) reported that decline in speed on motor tasks begins between the ages of eighteen and forty, at a time when verbal scores are still increasing.

Since verbal abilities do not appear to decline with advancing age, one might expect little decline in the ability to receive verbal information. Rossiter (1970) conducted an interesting study to determine the relationship of listening ability and chronological age. The subjects in the study were thirty female upper-level undergraduate and graduate students at Ohio University during 1968. The ages ranged from twenty to sixty years. The significant negative linear relationship found between age and listening scores indicated that listening ability does decline with increased aging. I suggest, therefore, that those teaching classes in which adult students may vary widely in age might be aware that older students may be retaining less from oral presentations or information than younger students.

Sharon (1971) suggests that the relative amount of knowledge in different academic subjects changes as a function of age. There is a progressive improvement in achievement in humanities, social science, and history, and a general decline in mathematics and the natural sciences.

Botwinick (1973:185) reports that this classic aging pattern of verbal and performance scores has been demonstrated many times and now constitutes one of the best replicated results in the literature.

The following questionnaire items were derived from this section on the pattern of mental abilities:

32. The pattern of mental abilities does not change with age. /False/
34. Scores on tests such as vocabulary show increases with age. /True/
36. Scores on tests measuring perception and dexterity show no decline with age. /False/
38. Older students retain as much information from oral presentations as younger students. /False/
39. Older students have a quantitative disadvantage when compared to younger students. /True/
45. Decline in speeded motor tasks begins between the ages of 18 and 40 years. /True/

Education and mental ability.--It has become apparent that many of the observed age differences in performance on learning tasks result from cohort differences--from differences in experience and education (Woodruff and Walsh, 1975). Sorenson (1930) sought to test the theory that inactivity in learning, rather than age, is related to the lower learning ability of some older adults. His results indicated that there was no decline in learning ability in his sample for those who had recently taken course work. There was, however, a slight decline in learning ability with age for those who had not recently participated in course work.

More recently, Knox and Sjogren (1965) and Sjogren, Knox, and Grotelueschen (1968) consistently found that level of education and recency of participation in an educational activity were related to an adult's ability to learn. The advantage of the recent participant over the nonrecent participant was interpreted to be a function of both the recent participant's broader background knowledge and his "knowing how to learn." The occupation of the individual also appears to influence his specific learning abilities. People learn from what they do, acquiring new knowledge and skills from their work (Dickinson, 1973:27-28).

Verhage found that individuals who test higher to begin with tend to maintain their level of performance longer than those who test lower (Troll, 1975:34).

It seems clear that the aged have considerable intellectual potential and ability to learn and benefit from education. The well known productivity, high level mental functioning, and creative output of many elderly individuals who remain active and involved in new learning experiences suggest that educational stimulation may accomplish this for many others. Almost certainly, however, we may anticipate, on the basis of available evidence, that education can play a significant role in enabling the aged to maintain their intellectual effectiveness (Granick and Friedman, 1973:61).

The following questionnaire items were derived from this section on education and mental ability:

31. Adult learning ability is influenced by the amount of formal education received. /True/
37. An adult's ability to learn is influenced by his occupation. /True/
43. Recency of participation in an educational activity is related to an adult's ability to learn. /True/

We have now reviewed some of the literature of the physiological changes and mental abilities of the adult learner. Recognizing that the mind can endure only as much as the back can take, let us take a short "stretch break."

It is only in the very recent past that we have come to study adults and adulthood as a developmental period in itself--a time during which biological maturation, accumulated experience, and formative learning serve to shape an age group which is qualitatively distinct from childhood, adolescence, or extreme old age (Huberman, 1974). This view is prevalent throughout the research in adult education (Brunner, 1959; Kidd, 1973; Knowles, 1974; Gould, 1975; Knox, 1977). As Havighurst (1956:1) concludes, "People do not launch themselves into adulthood with the momentum of their childhood and simply coast along to old age...adulthood has its transition points and its crises....It is a developmental period in almost as complete a sense as childhood and adolescence are developmental periods."

The tasks an individual must learn--the developmental tasks of life--are those things that constitute healthy and satisfactory growth in our society. A developmental task is a task which arises at or about a certain period in the life of the individual, successful achievement of which leads to his happiness and to success with later tasks while failure leads to difficulty with later tasks (Havighurst, 1972:2).

Whereas the developmental tasks of youth tend to be the products of physiological and mental maturation, those of the adult years are the products primarily of the evolution of social roles. Havighurst (1972) divides the adult years into three phases--early adulthood, middle age, and later maturity. According to Havighurst, the requirements for performing each of these social roles change as we move through the three phases of adult life, thereby setting up changing developmental tasks and, therefore, changing readiness to learn.

The following questionnaire items were derived from this section on psychological factors in the adult learner:

52. Adulthood is not a developmental period in itself. /False/
54. Developmental tasks of the adult years are related to the evolution of social roles. /True/
56. The concept of developmental tasks provides a way of identifying the educational needs of adults. /True/

With the exception of Havighurst (1956), Erikson (1950), Buhler (1935), and Kohlberg (1973), dynamic theories of personality have not been concerned with the problems of change in adulthood, although people such as Fromm (1941), Maslow (1954), and Jung (1933) have indicated the profound behavioral changes which may occur in adulthood.

Neugarten (1964, 1968) sees the adult personality as continuous but not identical with the personality of the child and the adolescent. She indicates the heightened importance of introspection in the mental life of middle-aged person--the stock-taking the increased reflection, and, above all, the structuring and restructuring of

experience. There is also a general movement of energy from an outer-world to an inner-world orientation. Thus, while it is not true that life begins at forty, it seems indeed to be true that life is different after forty.

Charlotte Buhler (1935) and her student Else Frenkel-Brunswick, from studies of four hundred biographies, proposed five stages of life that correspond to the biological phases of life. They suggested that life continues from premarriage (age 0 to 15) to preparatory expansion (age 15 to 25), to culmination and goal determination (age 25 to 45), to self-assessment (age 45 to 65), and to fulfillment or failure (age 65 and older). The key elements in this approach to the life-span concept are the turning points which usher in permanent changes marking a basic transposition in development. In general, at around forty-five years of age a change takes place in that the needs which come from the biological nature of man become less important, and the duties directed by our ideals or laid down by authority and practical demands play a more dominant role. The authors call this a transfer of dominance from the field of biological need to the field of personal and social duties.

In looking at personality, Jung (1971) was interested in problems of the psyche. He indicates that in the second half of life the individual turns inward, and that this inner exploration may enable him to find a meaning and wholeness in his life that makes it possible to accept death.

Erikson (1950) delineated the life cycle and personality into eight stages, each stage being characterized by a choice or crisis for the ego. The last three stages of his model deal with the development of intimacy in early adulthood, the crisis of generativity in middle adulthood, and the crisis of ego integrity in late adulthood.

These theorists have contributed toward a theoretical framework for the recent attention being given to the mid-life period in adult development.

For example, Lowenthal (1975), in her study of adult life stages, presents an analysis of the sociopsychological factors of the transitions of adult life. Her subjects were women and men at four stages of life: high school seniors, young newlyweds, middle-aged parents, and an older preretirement group from the middle and lower middle class. The field work consisted of a focused interview and several structured instruments, including the WAIS Vocabulary and Block Design subtests and the Thematic Apperception Cards.

An awareness of the psychological theories and needs in the life cycle are an important focus of those working with adults. To be apprised of the developmental stages, turning points, issues, and crises of adulthood will greatly enhance one's effectiveness in dealing with the adult learner.

One of the processes that occurs in the middle years of life which promotes change in personality is the reevaluation of time and the formulation of new perceptions of time and death (Neugarten, 1963:71).

The psychology of adults is distinguished from the psychology of earlier years in the experience of time. The major events of life can be expected to occur in the plus or minus five decades of adult life. To be aware that one is behind, on, or ahead of schedule of life expectations can have a profound effect on life adjustment. Lewin says that to the child the future is vague but just ahead, to the adolescent vague but unlimited; the adult, however, has a realistic attitude toward time which sharply differentiates his perspective from the outlook of youth (McClusky, 1963:18).

Neugarten (1963:68) believes that there comes a point, usually in the middle years, when the individual realizes that time is not infinite, and that the self will die. Along with this realization may come also an end to measuring one's lifetime from the date of one's birth, and measuring it instead from the distance from one's death.

Pressey and Kuhlen (1957:303-4) indicate that the perception of sublimits of time within the total life span may also influence the perspective of adults. Some sublimits may be biologically determined. For example, time is a crucial matter for the woman who marries late and wants children, or for the professional athlete seeking wealth before he is too old. Other sublimits are culturally determined, such as the time limit felt by the clerk of thirty-five who desires to be an executive.

Another phenomenon of the adult years is the universal experience that time seems to pass faster as one grows older. For a youngster of six, one year is one-sixth of all the time he has known. For a youth of sixteen, a year is one-sixteenth of his years. For a man of forty, a year is one-fortieth of life, and at seventy, merely one seventieth of the years lived (McCluskey, 1963:18).

Wallach and Green (1961), in an experiment using 278 older and younger adults of both sexes, demonstrated that older persons consider swift metaphors more appropriate for describing time, while young adults consider static metaphors more appropriate. This finding suggests that the subjective speed of time is more directly influenced by the value of time than by a person's level of activity as such, for, while activity level decreases in old age, the value of time seems to increase.

According to Kidd (1973:48), for an adult the investment of time in an activity may be as important a decision as the investment of money or effort.

Pressey and Kuhlen (1957:304) believe that sensitivity to the time variable may be one of the most distinctive features in the psychology of the adult years.

The following questionnaire items were derived from this section on time:

51. The adult has a less realistic attitude toward time than youth. /False/
58. A phenomenon of the adult years is the universal experience that time seems to pass faster as one grows older. /True/

Knox (1977:371) feels that time has a key influence on motivation. The adolescent has all the time in the world ahead of him; nothing seems impossible to do. But the woman of forty-five, the man at fifty, now realize that it may already be too late for the expression of some deeply felt needs, and that all future objectives will depend upon how much time is left for their expression. The intensity of motives may deepen or lessen; a man may be determined to finish some task before it is too late, or he may become resigned to the likelihood that it will never be finished.

Among middle-class Americans, for example, career drives are likely to take precedence over many other psychological needs and dominate the years of young adulthood, perhaps even to the point of resulting in minimal contact with family. If by forty or forty-five the career-oriented individual has achieved economic security and success, the need to get ahead may be much less in evidence and the former career-oriented individual may turn to his family or to community activities as a source of gratification (Kuhlen, 1963:78-79).

While motivation is extremely complex and imperfectly understood, it is best seen within the framework of an adult's needs, goals, habits, values, and self-concept. Thus,

an adult's willingness to engage in learning depends upon such factors as his perception of the value of learning, his acceptance of what and how to learn, his need for selfesteem or social affiliation with others, and expectations from life (Verner and Davison, 1971:4).

There are many different notions about motivation and its influence upon learning. From all of them, it seems clear that intrinsic motivation is far more important than extrinsic, especially when dealing with adults (Verner and Davison, 1971:4-5).

In general, adult learners enter a learning situation with a high degree of readiness to learn, but the adult wants answers that will relate directly to his life. The chances are that he will equate them to his life experiences. He makes qualitative judgments and he uses his life experiences to make new considerations. If he sees that he can gain relevant knowledge from activities in adult education, he will participate. If not, he will drop out. The fact that the adult learner is different makes the understanding of what Havighurst calls the "teachable moment" so important. That moment comes when a person has need for a skill or knowledge which will help him solve a life problem (Axford, 1969:77).

Jensen (1963:21-22) contends that adult students are not always interested in maximizing their learning or becoming totally involved in each instructional situation in which they take part. Rather, they are inclined to distribute their energies and involvement according to the kind and amounts of learning they feel would be most beneficial to them in the present and for the future.

Gardner Murphy (1955) contends that the adult has not fewer but more emotional associations with factual material (than do children), although we usually assume he has less because the devices of control are more elaborate and better covered in the adult. This emotional association with words or events may affect the adult in gaining new knowledge.

Jacob Getzels (1956) indicates that adults learn best the things that are in keeping with their value systems and their personal biases. In a review of experiments in learning and learning theory, Getzel shows that the adult learns best those things where he sees relationships that are relevant to him.

The following questionnaire items were derived from these sections on motivation and life experience:

55. In teaching adults extrinsic motivation is more important than intrinsic motivation. /False/
57. Emotional association with words or events may affect the adult in gaining new knowledge. /True/
60. Adult learners enter a learning situation with a high readiness to learn. /True/

Another aspect of the relationship between learning and motives can be seen in the reasons adults attend programs. In an indepth study of twenty-two cases of participants in adult education activities, Cyril O. Houle investigated their purposes and objectives. Houle classifies the continuing learner as: (1) goal-oriented (those pursuing their education as a means of accomplishing fairly clearcut objectives), (2) the activity-oriented (those who take part in learning for reasons unrelated to education, perhaps out of loneliness, or a need for social activity), and (3) learning-oriented (those seeking "learning for learning's sake") Houle, 1961:15-25).

Since Houle's work, many other studies (Sheffield, 1964; Burgess, 1971; and Boshier, 1971, 1973, 1977, 1979; Grotelueschen and Caulley, 1977) have tried to assess the importance of reasons for adult participation in educational activities. For example, Burgess (1971), with his instrument "Reasons for Educational Participation," identified the following seven groups of reasons for adult participation:

The Desire to Know
The Desire to Reach a Personal Goal
The Desire to Reach a Social Goal
The Desire to Reach a Religious Goal
The Desire to Escape
The Desire to Take Part in Activity
The Desire to Comply with Formal Requirements

According to Jensen (1963:23), when adults do participate in educational activities, they are especially concerned with maintaining and enhancing their social worth and success. Adults have a strong need for the acquisition of new knowledge and skills in an instructional situation in which there is no danger of losing "hard-won" prestige.

Warren (1961) contends that adults, even more than children, are sensitive to failure in their learning situation, and that previous unfavorable experiences with education may cause fears and self-doubts about ability (Comfort, 1974).

Tuckman and Lorge (1953) conducted a study to investigate the attitudes of a young adult group of graduate students toward old age as measured by their responses to a questionnaire consisting of misconceptions and stereotypes about old people.

The questionnaire was administered to 147 graduate students (92 men and 55 women) enrolled in a course on the "Psychology of the Adult at Teachers College." This study indicated that there was a substantial acceptance of the misconceptions and stereotypes about old people. The responses indicated that these graduate students look upon old age as a period characterized by economic insecurity, poor health, loneliness, resistance to change, and failing physical and mental powers.

Tuckman and Lorge conclude that from the results it appears that old people are living in a social climate which is not conducive to feelings of adequacy, usefulness, security, and to good adjustment in their later years.

If these concepts are subsumed by the adult learner, the fear of aging, rather than the aging process itself, may induce mental deterioration (Horvath, 1952).

George Aker (1971:55) contends that adults are more bound to their stereotypes than are children. This follows through with almost every attitude, belief, and set of values of an adult. He's tied to them more. It is more difficult to set them aside for awhile and entertain some conflicting, opposing points of view.

Zahn (1967) indicates that the way in which a person organizes his perceptions, as well as what he selects to perceive, is influenced by what he expects; and what he expects depends on his experience and his motives. It is more difficult to change the perceptions of an adult than of a child because the adult has had more prior experience.

Adults have different values, interests, and personality traits than youth has, and their concerns and dispositions tend to be more stable (Zahn, 1967). Studies by Strong (1953), Thorndike (1953), and others indicate the following changes in adult interests:

1. Activities requiring physical skill and daring decrease in liking as one ages.
2. With few exceptions, liking for occupations decreases with age.
3. Interests can be modified.
4. Slight decrease in the total volume of interest from the twenties to the fifties.

The following questionnaire items were derived from this section on self-concept:

46. Adults are often inhibited from active participation in discussion by a lack of confidence in their own ability. /True/
47. Frequently the fear of aging, rather than the aging process itself, induces mental deterioration. /False/
48. Adults even more than children are sensitive to failure in their learning situation. /True/
49. Adults rarely hold the opinion that they are unable to learn. /False/
50. Adults are concerned with maintaining and enhancing their social worth and success. /True/
53. Once the adult has formed a perception of a stimulus it is difficult for him to change his mind. /True/
59. With few exceptions liking for occupations increases with age. /False/

In conclusion of this section let us remember that change and consistency in adult personality constitute a problem area that thus far has attracted relatively few psychologists; nevertheless, evidence is beginning to accumulate that systematic and measurable changes occur in the second half of life (Neubarten, 1968). Adults change through the years in their sense of time, their career pattern, their physiological condition, and their complex of interests and motivations. An adult psychology is a necessity for continuing education (Huberman, 1974).

Having reviewed some of these changes that have occurred throughout adulthood, let us now discuss how these differences will affect an adult's orientation to learning.

In this section the following areas will be discussed: andragogy, experience, adult learning orientation, and implications for the adult teacher.

According to Malcom Knowles (1975), most of what is known about learning has been derived from studies of learning in children and animals. Most of what is known about teaching has been derived from experience with teaching children under compulsory attendance. Birren and Woodruff (1973) feel that teachers who are currently employed, as well as those now being trained, are not prepared to teach middleaged and aged adults, and they are not being provided with appropriate information about the biological, psychological, and sociological aspects of life-span development.

When adult education began to emerge as a field of social practice, it simply borrowed the assumptions and strategies of pedagogy. But when a falling retention rate in adult classes was noted, teachers began experimenting with different assumptions and strategies, and there began to emerge a body of literature describing successful teachers of adults.

In the early 1960's European adult educators, especially in France, Germany, Yugoslavia, and the Netherlands, started using the label "andragogy" to identify this increasingly differentiated body of theory and technology of adult learning which gave credence to the differing learning orientations of children and adults. The connotation given to his new label was "the art and science of helping adults learn."

The following questionnaire items were derived from this section on orientation of the adult learner:

6. Andragogy is the art and science of helping adults learn. /True/
16. Adults and children have the same orientation to learning. /False/

Having lived longer and having a greater apperceptive mass of past experiences, adults are not only much more complex than children, but they are also more differentiated and less dependent on immediate influences of the environment (Huberman, 1974).

Kidd (1973:45-46) indicates three basic ways in which adulthood differs from youth in the human life cycle: (1) adults have more experiences; (2) adults have different kinds of experiences; and (3) the life experiences of adults are organized differently.

An adult's sexual or social experiences are of a kind that mark him off from the world of children. The same can be said for experiences of a job, or politics, or war. But this point has not always been understood or accepted (Kidd, 1959:45).

An adult brings to learning situations a tremendous range of stored learning--the accumulations from experiences in everyday living. These are the most important resources for learning (Lorge, 1963; Hendrickson, 1970).

Conversely, in the case of many adults, especially older ones, long experience will cause them to be set in their ways and resentful of change (Hendrickson, 1970). According to Zahn (1967), the greater experience a person has had, the more the past probably will interfere with the present. It is easier for an experienced person to learn a completely new task than to learn to do a familiar task in a new way.

The more the teacher of adults can base his/her teaching upon previous experience, the better and faster the adult will learn. The teacher should urge the adult to relate new or difficult concepts to his own experience and to use the past to help himself with the present and the future (Zahn, 1957; Whipple, 1957).

The following questionnaire items were derived from this section on experience:

1. Adult students should be encouraged to relate new or difficult concepts to their existing knowledge. /True/
4. It is difficult for an adult to do a familiar task in an unfamiliar way. /True/
5. An adult's experience is an increasing resource of learning. /True/
9. An adult's experience may interfere with the learning process. /True/

Adults, even more than children, bring attitudes with them into the learning situation that markedly affect their ability to learn or their motivation. Those adults with strong feelings of powerlessness will fail to learn to control relevant information. Adults will be more motivated to listen and to read content which may increase their competence in a current situation (Zahn, 1969).

Comfort (1974) indicates that adult learners want educational experiences or knowledge which is related to job/life situations. He further contends that adults are more interested in applied knowledge than in theory, and they enter into a learning situation in a problem-centered frame of mind.

One of the assumptions of andragogy is that the adult's time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his orientation toward learning shifts from one of subject-centeredness (the traditional seven subjects of youth eradication) to one of problem-centeredness (Knowles, 1970).

This change in orientation supports Jensen's (1963) contention that adult students are not always interested in maximizing their learning or becoming "totally" involved in each instructional situation in which they take part. Rather, they are inclined to distribute their energy and involvement according to the kind and amounts of learning they feel would be most beneficial immediately and for the future. He also feels that adult students should be able to influence their own learning goals as a means of making certain that these goals take account of their needs and problems. Since the adult has compelling responsibilities competing for his time and attention, many adults desire minimum time expenditures to complete their educational objectives (Comfort, 1974).

From a series of studies conducted at the Ontario Institute for Studies in Education, Tough (1979:1) and his associates discovered that it is common for an adult to spend seven hundred hours a year at learning projects, and about 70 percent of all learning projects are planned by the learner himself. Hiemstra (1976:33) states that many educators are beginning to pay attention not only to the uniqueness of the adult learner, but also to the tremendous interest in and need for self-directed, individual learning.

The following questionnaire items were derived from this section on learning orientation:

3. Adult learners are often problem centered rather than subject centered. /True/
7. Adult learners want educational experiences which relate to job/life situations. /True/
10. Adult students should be involved in formulating their learning objectives. /True/
11. Adult learners desire minimum time expenditures to complete their educational objectives. /True/

In an article on adult learning and modification of attitudes, Andersen (1969) comments that adults learn more effectively and quickly in a noncompetitive atmosphere where they can cooperate with others and use their experience to foster learning. Ross (1968), in a study on the "Effects of Challenging and Supportive Instructions on Verbal Learning in Older Adults," gave sixty young and sixty old subjects two paired-associate learning tasks differing in level of difficulty under neutral, supportive, and challenging instruction. Older subjects revealed a greater performance decrement on the more difficult task than did the younger group. Elderly subjects did least well on the acquisition phase of learning under challenging instructions and best under the supportive treatment. Ross concluded that the increasing insecurity and susceptibility to stress of aging individuals become particularly evident when they are placed in an evaluative situation and told that their performance will be compared with that of others.

Haines and McKeachie (1967) found that required competition was a potent factor in raising anxiety levels. They also found that when compounded by the learner's existing anxiety level, the tension created by class competition, especially under a competitive grading system, resulted in an undesirable situation. According to Knowles (1970:43), "Nothing makes an adult feel more childlike than being judged by another adult; it is the ultimate sign of disrespect and dependency, as the one who is being judged experiences it." He feels evaluation should be a mutual undertaking, as are all other phases of the adult learning experience.

Woodruff and Walsh (1975) indicate that for older adults the threat of evaluation such as objective tests graded on a competitive basis probably should be avoided. Pankowski (1975) comments that teachers of adults should work with them in developing mutually acceptable criteria and methods for measuring progress; helping the learner to develop and apply procedures for self-assessment according to these criteria. Involving the learners in selecting objectives enhances motivation and learning. Specific objectives are stated in measurable terms: (1) to assess the learning outcome that is sought so the teacher can help effectively design the instruction; and (2) to facilitate measuring learning outcomes--whatever capability of the learner can't be specified in observable human performance can't be measured.

According to Larson (1970), too few teachers know enough about the adult learner's anxiety level. Many adults come to their classes with a good deal of insecurity and anxiety about their ability to succeed in a new learning situation (Larson, 1970; Pankowski, 1975; Basowitz and Korchin, 1957). Many adult students feel they do not possess the necessary study skills (Comfort, 1974). In a study of the characteristics and educational needs of adult undergraduate students at the University of Oklahoma (Barney, 1972), some of the most frequent "suggestions" were refresher courses and help in learning how to study. Jensen (1965) contends that the learning tasks designed for adults must be commensurate with the study skills they possess so as not to confront them with a situation in which a loss of personal esteem is likely to result.

Henrickson (1970) feels that coming from a world of work where mistakes are costly, most adults have higher standards of performance than do children or youth; therefore, they have a strong need for the acquisition of knowledge and skills in an instructional situation in which there is no danger of losing "hard-won" prestige (Jensen, 1965; Glass and Harshberger, 1974).

Knox (1974) reports that adults learn more effectively when they receive feedback regarding how well they are progressing. Punishment and threatening instructions slow up the learning process in adults much more than in children (Anderson, 1969; Lorge, 1965; Dickinson, 1973; Knox, 1974).

One of the basic principle of adult learning is that students should be able to learn at their own pace. By far the most constant modification in behavior noted with advancing age is a decline in performance on speeded tasks (Birren, 1964, 1970). For example, Eisdorfer, Axelrod, and Wilkie (1963) established that when the time to respond is increased in serial learning the old benefit more than the young. The same effect has been found in paired-associate studies. Canestrari (1963) reported that paired-associate performance of the old improved more than that of the young when the pace was slowed (Arenberg, 1973).

Adults typically learn most effectively when they set their own pace and take a break periodically. If an adult is forced to proceed much slower or faster than his preferred pace, his learning effectiveness declines (Knox, 1974).

Belbin (1953) conducted a study into difficulties that older people experienced in thirty-two factories. Where work was subject to time stress (when tempo of work was maintained by rigid pacing or time pressure), there was some tendency both for men and women to move away from operations requiring continuous body movement and activity especially where the worker was paced by a machine or conveyor.

The following questionnaire items were derived from this section on learning orientation:

2. In helping adults to learn reward is more effective than punishment. /True/
8. In the adult learning process, grading rather than self-evaluation is more effective. /False/
12. Older students should not be allowed to set their own learning pace. /False/
13. Most adults have higher standards of performance than children or youth. /True/
14. Adult students often lack necessary study skills. /True/

We have now concluded the "do" portion of my presentation. I would like to go into the "review" section by allowing our remaining time to be used for questions, clarification or elaboration. We'll conclude this section tomorrow morning. Thank you.

ROSSMAN ADULT LEARNER INVENTORY (RALI)©

Directions: The following is a series of general statements about the characteristics of the adult learner (over 25 years of age). If you feel the statement is usually True, place a "T" in the space provided. If you feel the statement is usually False, place a "F" in the space provided.

____ 1. Adult students should be encouraged to relate new or difficult concepts to their existing knowledge.

____ 2. In helping adults to learn, reward is more effective than punishment.

____ 3. Adult learners are often problem centered rather than subject centered.

____ 4. It is difficult for an adult to do a familiar task in an unfamiliar way.

____ 5. An adult's experience is an increasing resource of learning.

____ 6. Andragogy is the art and science of helping adults learn.

____ 7. Adult learners want educational experiences which relate to job/life situations.

____ 8. In the adult learning process, grading rather than self-evaluation is more effective.

____ 9. An adult's experience may interfere with the learning process.

____ 10. Adult students should be involved in formulating their learning objectives.

____ 11. Adult learners desire minimum time expenditures to complete their educational objectives.

____ 12. Older students should not be allowed to set their own learning pace.

____ 13. Most adults have higher standards of performance than children or youth.

____ 14. Adult students often lack necessary study skills.

____ 15. Adults and children have the same orientation to learning.

____ 16. Maximum auditory acuity is attained between 10 and 15 years of age.

____ 17. In the aging process, there is a loss of auditory acuity on the high tones.

____ 18. Loss of hearing reduces the ability to recall long sentences.

____ 19. Many older adults find it difficult to follow rapid speech in spite of little or no hearing loss.

____ 20. For normal learning tasks an adult by age 30 requires 120 watts of illumination while by age 50 180 watts are required.

____ 21. After age 15 there is a gradual, but consistent decline in hearing to about 65 years of age.

____ 22. The inability to hear can produce emotional disturbances such as, depression, anxiety, or frustration.

____ 23. Visual acuity attains its maximum at about 18 years of age.

____ 24. With advancing age the lens loses its elasticity and cannot focus readily.

____ 25. A major change in visual acuity occurs between age 50 and 60.

____ 26. About 85% of all learning occurs through the use of the eyes.

____ 27. Speed of reaction time tends to decline with age.

____ 28. There is a somewhat greater tendency for women to show impaired hearing than men.

____ 29. As we age, we slow up in our reaction to auditory stimuli.

____ 30. Speed of performance does not decline with age.

____ 31. Adult learning ability is influenced by the amount of formal education received.

____ 32. The pattern of mental abilities does not change with age.

____ 33. Age in itself does little to affect an individual's power to learn or to think.

____ 34. Scores on tests such as vocabulary show increases with age.

____ 35. Compared to youth, adults usually require a longer time to perform learning tasks.

____ 36. Scores on tests measuring perception and dexterity show no decline with age.

____ 37. An adult's ability to learn is influenced by his occupation.

____ 38. Older students retain as much information from oral presentations as younger students.

____ 39. Older students have a quantitative disadvantage when compared to younger students.

____ 40. Age influences the speed of learning.

____ 41. The natural course of aging does not include cognitive decline.

____ 42. Motivation of the adult taking a test is a major factor in performance.

____ 43. Recency of participation in an educational activity is related to an adults ability to learn.

____ 44. The most critical yeats in the aging process occur between the 50th and 70th years.

____ 45. Decline in speeded motor tasks begins between the ages of 18 and 40 years.

____ 46. Adults are often inhibited from active participation in discussion by a lack of confidence in their own ability.

____ 47. Frequently the fear of aging, rather than the aging process itself induces mental deterioration.

____ 48. Adults even more than children are sensitive to failure in their learning situation.

____ 49. Adults rarely hold the opinion that they are unable to learn.

____ 50. Adults are concerned with maintaining and enhancing their social worth and success.

____ 51. The adult has a less realistic attitude toward time than youth.

____ 52. Adulthood is not a developmental period in itself.

____ 53. Once the adult has formed a perception of a stimulus it is difficult for him to change his mind.

____ 54. Developmental tasks of the adult years are related to the evolution of social roles.

____ 55. In teaching adults extrinsic motivation is more important than intrinsic motivation.

____ 56. The concept of developmental tasks provides a way of identifying the educational needs of adults.

____ 57. Emotional association with words or events may affect the adult in gaining new knowledge.

____ 58. A phenomenon of the adult years is the universal experience that time seems to pass faster as one grows older.

____ 59. With few exceptions liking for occupations increases with age.

____ 60. Adult learners enter a learning situation with a high readiness to learn.

This concludes the Rossman Adult Learner Inventory (RALI)©

Table 1

Estimated Percentage of the Population with Defective Vision

Age	Percent Defective
Twenty	23
Thirty	39
Forty	48
Fifty	71
Sixty	82
Seventy	95

Table 2

The Progressive Increase in Wattage Required for Visual Tasks

Age	Wattage Required
Twenty	100
Thirty	120
Forty	145
Fifty	180
Sixty	230
Seventy	300
Eighty	415

OUTLINE

Working Effectively with Adults: What Research and Practice Tell Us.

Dr. Mark H. Rossman
Associate Professor
Higher and Adult Education
Arizona State University

I. Physiological Changes in The Adult Learner

A. Vision

1. Visual Acuity

2. Pupil Diameter

3. Dark Adaptation

4. Illumination

5. Contrast

6. Color Vision

OUTLINE - cont'd.

B. Audition

1. Sound Frequencies

2. Discrimination

C. Reaction time

II. Mental Abilities in Adult Learning

A. Decline vs. Growth in Intellectual Functioning

B. Terminal Drop

C. Thorndike

OUTLINE - cont'd.

D. Speed vs. Power

E. Pattern of Mental Abilities

F. Education and Mental Abilities

III. Psychological Factors in The Adult Learner

A. Time

B. Motivation

C. Life Experience

D. Participation

E. Self-Concept

IV. Orientation of The Adult Learner

A. Experience

B. Learning Orientation

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"Cross-Cultural Considerations in Adult Education"

The topic that was suggested to me a couple of months ago turns out to be a timely one. For we read almost daily in our newspapers about an influx of thousands of so-called "boat people" from Vietnam and Haiti, and thousands more fleeing from Cuba to the United States. However, in our concern for these groups of people, we must not overlook the unmet needs of other culturally different groups already here. I refer to the American Indians, Hispanics (Mexicans, Puerto Ricans, Cubans), blacks and, indeed, all Americans who are separated from the dominant society for reasons of limited education, limited or non-existent job opportunities, low incomes, crowded housing, and other conditions of poverty. This group is the one referred to by Harrington as "the other America." Here is his powerful description:

The other America does not contain the adventurous seeking a new life and land. It is populated by the failures, by those driven from the land and bewildered by the city, by old people suddenly confronted with the torments of loneliness and poverty, and by minorities facing a wall of prejudice.[1]

How have we handled this problem in the past? Not very well, according to some writers. For example, at an international conference on cross-cultural education, Chance presented a graphic account of the way in which the early missionaries regarded the native Alaskan:

Uncivilized, dirty, and uninhibited, these people were frequently considered inferior creatures of Divine Creation. Efforts to civilize the Native included attempts at destroying the Native language, culture, and religion, instilling guilt over barbarous customs, and promoting new forms of behavior and thought acceptable to western custom. Government policies of the period stressed education for rapid economic and cultural assimilation.[2]

This process of assimilation has been labeled by Carlson as "Americanization," or the "quest for conformity." It began with the "melting pot" theory which was advanced by an 18th century French immigrant farmer and writer called Hector St.John de Crevecoeur. In his popular Letters from an American Farmer, he wrote that "here individuals of all nations are melted into a new race of men..."[3] However, despite all the rhetoric surrounding the melting pot theory, it never took hold, as Carlson pointed out:

...U.S. citizens had no intention of modifying their patterns of life, and they certainly were not prepared to change the newly formulated Protestant republican ideology. National commitment to the melting pot idea was a myth, for Americans expected the immigrant to discard his own patterns and adopt those prevailing at the time in the United States.[4]

The choice for these culturally different groups lay, then, between joining the dominant North American society or remaining in their own cultural milieus in a subordinate relationship to the dominant society. Those who elected to remain in their own cultural milieus found themselves in almost total linguistic and cultural isolation from members of the dominant society. While such isolation ensures a degree of social and psychological security to ethnic groups, the price is high. They fail to develop the interaction skills needed in the world of work and to broaden their social skills through experiences outside of their own environments.

This remark brings me to the heart of my topic today for a very important cross-cultural consideration is communication. But before we turn to the process of communication, let us consider some characteristics of the population we have been discussing. In their 1970 study Anderson and Niemi reported that many of them uphold value systems that are clearly at variance with those of the dominant culture. For example, because these groups foresee no future that differs markedly from the present, they tend to pragmatism and "present" orientation--a "live for today" philosophy that stresses short term goals and immediate rewards as opposed to planning for the future and patiently carrying out those plans. On the other hand, members of the dominant culture lean toward future orientation, set long term goals, and exhibit more willingness to wait for rewards like promotion, salary increases, and pensions. In practical terms and partly as a response to discrimination on the part of the dominant culture, many culturally different groups distrust, even reject, its formal institutional structures such as schools and colleges in favor of "small, personal kinship, locality, or friendship groups."[5]

As Miller reported concerning Mexican-Americans: Numerous studies have stressed the great importance of familism...Presumably, the family is the most important social unit, taking primacy over even individual family members much less over all external groups. This commitment not only pertains to the individual and his immediate conjugal family but also to the wider circle of relatives including married sisters and brothers and their children, grandparents, aunts and uncles, first cousins...[6]

The value systems to which I have referred bear a close relationship to age, sex, and socioeconomic characteristics of these culturally different groups--that is, education, income, employment, marital status, family size, residence, and health. Anderson and Niemi reported many studies that showed educational level as a consistently significant variable when related to occupation and income; that is, poorly educated people generally held unskilled or semi-skilled jobs paying low incomes. Similarly, income and education are related to matters of residence, health, family size, and crime.[7]

More recently (1979), Hunter and Harmon reported that across all levels of education, minority group members rank lower than majority group members....Blacks, of course, are by no means the only educationally disadvantaged racial or ethnic group. Hispanic groups, especially Hispanic women, have a noticeably lower level of educational attainment than either whites or blacks. All those for whom English is not the mother tongue --about 30 million Americans or 13 percent--face special educational difficulties. This includes the large but unknown number of illegal aliens, mostly Spanish-speaking. The 827,000 Native Americans also face special problems. Only 40 percent of adult urban Native Americans, and fewer than 25 percent of those who live in rural areas have graduated from high school. Their representation in the work force is so low that they generally do not even appear on the charts.[8]

All these factors contribute to a low self-concept on the part of some individuals when they must deal with members of the dominant society. I must stress that within their own cultural milieus those individuals do not suffer from a low self-concept. On the contrary, the deeprooted family ties provide a strong support system for nourishing the ego.

To return to the topic of communication, it covers so vast and diverse a range of human interaction that it defies definition in any but the most general terms. But we can say that this interaction includes both verbal and non-verbal transmissions, i.e., noises, silence, and the body language of posture, movement, eye contact, and facial expression. Non-verbal activities may precede conversation, occur in conjunction with

it or follow it. When they do, the total act or phenomenon is referred to as "para language" or "paralinguistic behavior." Being culturally determined, such phenomena vary from social group to social group. They even vary within certain groups where different dialects and value systems give rise to different modes of communication.

The process of communication in all its forms involves an exchange of meaning between the sender of a message (encoder) and the receiver (decoder). A number of models--mathematical, linguistic, sociological, and psychological--have been developed to illustrate this interaction and the factors operating to facilitate or impede it. Schramm's model rightly emphasizes the importance of "intersecting fields of experience," if successful communication is to be achieved.[9] However, because the points of intersection between the dominant culture and other cultures are extremely limited, it seems more appropriate and more realistic to talk about different cultural "milieus." The concept refers to the often strikingly different perceptions of reality entertained by each group.[10] To illustrate, the concept of time to members of some Indian cultures calls up the seasons and seasonal work, while to members of the dominant culture the concept calls up monthly, daily, or even hourly schedules that must be rigidly followed. Another example relates to differing views of nature; in general, the native Indian cultures have attempted to live in balance with nature, while the dominant culture has attempted to control it.[11] These different perceptions of reality have been researched by Hall who comments that...people from different cultures not only speak different languages but, what is possibly more important, inhabit different sensory worlds. Selective screening of sensory data admits some things while filtering out others, so that experience as it is perceived through one set of culturally patterned sensory screens is quite different from experience perceived through another.[12]

These different perceptions of reality are communicated through both verbal and nonverbal modes of communication. The verbal has been succinctly described by Lasswell as "who says what in which channel to whom with what effect."[13] A major problem is that culturally different groups have not only to wrestle with learning a new language; they must struggle to understand the culture, its concepts, attitudes, values, etc. Compounding this problem is the so-called "interference" from their own languages. According to Hernandez, such interference occurs when persons attempt to function in one language by substituting elements of another language. For example, English words have been adapted to Spanish, resulting in a "barrio" language that produces such expressions as "el troque" (the truck) and "la ganga" (the gang).[14] I might add that as an American Finn, I have witnessed this phenomenon in northern Michigan where I grew up. There English words have undergone the same kind of transformation. The result is a language referred to as "Finglish."

Another problem relates to the different sound systems of languages. A person attempting to learn a new language may encounter great difficulty in mastering new and unfamiliar sounds. Again, the problem is compounded if he or she has not completely mastered the sound system of the first language. Without this background it is hard to take one of the first steps in acquiring a new language--comprehension of the differences between its sound system and the sound system of a new language.

A third problem in language is that the dominant culture does not always understand the strong oral tradition that is the basis of many other cultures, such as that of the North American Indian. Yet this tradition underlies the learning process in Indian cultures as Clutesi, Canada's well-known Indian author, tells us:

The Indians' way of teaching to begin with was oral. One must have good memories to teach orally and, of course, a pupil must of necessity develop good memories....[15]

The point is reinforced by Storm in his book Seven Arrows: What is the meaning of this story? This is not something anyone understands fully the first time they hear it, my son. Hawk answered the boy...I find more in this Teaching every time I hear it....[16]

A fourth problem relates to differences in such devices of language as idioms and figures of speech. In his work with Alaskan natives Vaudrin reports on situations where natives encounter regional or cultural idioms that do not lie within their fields of experience, e.g., "bull in a china shop," "out in left field." Such metaphors, used by a member of the dominant culture in an oral presentation, might be taken literally by the native people. The result is likely to be confusion on their part and a consequent tuning out of the entire presentation. On the other hand, a speaker's use of local, Indian-based experiences, literature, and folklore as bases for his or her analogies would not only enhance the audience's trust and sense of identification, but would bring into play the perceptual skills that are conducive to learning among native peoples.[17]

As a mode of communication, non-verbal communication is partly instinctive, partly taught, and partly imitative.[18] Through this language the receiver of a message perceives the inner feelings of the communicator. The study of body language has emerged within the past few years under the label "kinesics."[19] Knapp describes this interaction:

Body motion, or kinesic behaviour, typically includes gestures, movements of the body, limbs, hands, feet and legs, facial expression, eye behaviour, and posture. The furrow of the brow, the slump of the shoulder and the tilt of a head--all are within the purview of kinesics. Obviously there are different types of non-verbal behaviour just as there are different types of verbal behaviour. Some non-verbal cues are very specific, some more general: some intended to communicate, some expressions only; some provide information about emotions, others carry information about personality traits or attitudes.[20]

When faced with language limitations people search for non-verbal cues or covert messages. If members of the dominant culture do not recognize this reliance on the non-verbal mode of communication, their attempts at communication are bound to fail. Kleinfeld, who has done research among Alaskan native people, wrote: "Increased awareness of these covert messages and how they are communicated is especially important in cross-cultural relationships because of the heightened sensitivity of both parties in an unfamiliar interaction and because social symbols differ across cultures."[21]

Sometimes the covert messages which Indians receive are at variance with the overt, or verbal ones, as when a member of the dominant culture outlines a program designed to help them, but shows through his or her kinesic behavior (a shrug of the shoulders or a furrowing of the brow) a disdain for their values or impatience with their problems. It should be noted that silence is an important carrier of meaning. Obviously, the messages conveyed kinesically are more susceptible to misinterpretation than is verbal behavior; that is, it seems easier for the decoder to read into body movements messages that the encoder never intended.

"Proxemics," like kinesics, is a relatively new field of study. It has to do with space and is described by Thompson as follows:

Animals that live together, including humans, require space in which to move, eat, sleep, work, and socialize. Proxemics proposes to describe and investigate how they use space as a rudimentary language system to pass information back and forth.[22]

Hall has conducted some interesting research on the variations in "proxemic patterns" among Americans, English, Germans, French and others. Such patterns, he warns, "point up in sharp contrast some of the basic differences between people--differences which can be ignored only at great risk."[23]

So far we have discussed such cross-cultural considerations as acculturation, certain social-psychological characteristics of culturally different groups, socioeconomic characteristics, and problems of communication between members of those groups and the dominant culture. Now I propose to explore some implications for adult education. These will deal with such topics as program planning, the teaching-learning transaction, and research.

We know that in planning programs for culturally different groups the adult educator must carry out a needs assessment. The point to be borne in mind is that these groups should take an active part in this process and, indeed, in the entire program planning process. Allowance should be made for the fact that it takes time for people to assess their own needs and to express themselves freely, especially if they are experiencing problems with a new language and with the concepts, attitudes, and values of the dominant culture. The adult educator must recognize the importance of mutual trust. Information that is gained through artificial or intimidating circumstances will be invalid as basis for meaningful programming. If the adult educator makes a sincere attempt to establish a positive climate and to understand the characteristics of these groups and the communication difficulties they may be having, the task of planning programs will become easier. Another suggestion is that the adult educator ought to seek out some leaders indigenous to the group who will be able to interpret their needs to the adult educator and to acquaint the group with his or her thinking. This collaborative approach contrasts sharply with the dependency approach in which educators and others plan programs for these groups without consulting them. One bad result has been that adults tend to drop out of such programs, because they do not see them as relevant to their needs. As Haggstrom puts it:

From the point of view of the poor, most programs extended to them are upside down, serving the affluent society which offers the programs rather than being sensitively related to the continuing action of the poor.[24]

To continue our discussion of the collaborative approach, many of you are no doubt aware of the ideas presented by Alinsky, Freire, and Horton. All have worked with minority groups in activist roles, advocating a high degree of participation by these groups in shaping their own destinies. Alinsky, who worked as a community organizer, saw these learners as have-nots and described the needs of culturally different groups as follows: (1) they must have assurance of success; (2) they must feel that they have real power; (3) they have many fears and rationalizations; (4) they have a need for security; (5) they are locked into a status quo mentality; (6) they must be convinced of their own importance and dignity; and (7) they must want our services. Alinsky also felt that if people are to become educated, they must be guided from their present point of experience with great commitment in terms of time and patience on the part of the adult educator. The process should serve as a learning experience as opposed to a state of self-pity.[25]

Freire, a Brazilian, is famous for his approach to literacy, which enables people to deal critically and creatively with reality and to discover how to participate in the transformation of their world. According to Freire, these learners develop as follows: (1) as conscious beings; (2) as persons engaged in problem-posing education; (3) as persons intentionally communicating in dialogical relationship; (4) as teachers of each other; and (5) as persons in the process of becoming aware of reality.[26]

Lastly there is Horton, an American adult educator known for his establishment of a modified Scandinavian residential folk school in Tennessee. He feels that as a learner becomes actively engaged in his or her personal development, a growing pride, based upon expanding self-determination and success, will overcome fears; and that the power of knowledge will reinforce this self-concept. His observations of these adult learners are as follows: (1) people know the answers to their own problems; (2) delayed gratification remains a well-fed middle-class notion; (3) peer group learning is very important; (4) poor people solve their problems through conflict; (5) adults must be respected as adults; and (6) the key to success is practical self-determination.[27]

As you can see from this brief discussion of the ideas of Alinsky, Freire, and Horton, all of them take a positive, humanistic attitude which abounds with hope for culturally different groups. I think it is worthwhile for us to study their philosophies and incorporate at least some elements into both the planning and delivery of programs.

The essence of the idea that people can shape their own destinies through collaborative efforts to solve their own problems can be traced in the attempts of the National Film Board of Canada to facilitate dialogue within communities through the use of the videotape recorder. The purpose was to help people to discern their own problems more quickly and to take a direct hand in seeking creative solutions. A good example is the project launched by the St. Jacques Citizens Committee of Montreal in 1968. Here is how it worked:

They went out into the streets and interviewed the people about their problems in order to learn more about the neighborhood and to make people think about what could be done. Then an edited half hour tape was used to catalyze discussion at the beginning of a series of public meetings. This procedure was very effective; people plunged into the heart of the discussion instead of being fearful about expressing themselves. The citizens also learned a lot about themselves by viewing themselves in action during meetings and discussions.[28]

Another innovation in the use of media to determine community needs was the Sky River project in Anchorage, Alaska, which treated the village of Emmonak as a case study. There the Eskimo people used videotape recorders and film as a way of presenting to the government the case against residential schools and the case for regional schools instead. An important adult education principle illustrated by this project was the provision to a community of the tools that would help them to assess their own needs and to assign priorities to them.[29]

Finally, in planning programs for culturally different groups, I recommend the use of outreach centers, or satellite locations. Here the involvement of advisory groups in planning the programs to be offered and the location and times of classes should help overcome the kinds of physical, socioeconomic, and social-psychological problems that are described in an article in Adult Leadership:

(1) lack of transportation, (2) differences in social and academic status from people in other sections of the city, (3) the need for a learning environment that did not re-

call failure and frustration, (4) the /absence of/ the stimulus of "success of orientation" in the student's own neighborhood, and (5) the lack of child care facilities.[30]

The need for a community adult learning center was the major recommendation of Bailor in a study that examined the factors inhibiting Mexican Americans' participation in continuing education classes.[31]

To conclude my remarks on program planning for culturally different groups, I realize that I have leaned heavily toward a collaborative approach, the key to which is the communication process that I emphasized earlier. If we want our programs to succeed, to reach those who desperately need our help, then we would do well to heed the advice of Arkava:

The general communications...approach is one that is based on the underlying assumption that confusion exists between individuals and social systems because they are not effectively communicating. The idea is that if people can see more correctly, communicate more adequately, and reason more effectively, they will be able to lay a realistic common basis for action and changing.[32]

I have already stressed the importance of creating a positive climate when planning programs with culturally different groups. This element is equally important in the teaching-learning transaction. One way that such a climate can be fostered in the classroom is through a teacher's empathy with learners--the intimate understanding of their feelings, thoughts, and motives. This humanistic attitude can be manifested through talking with our students not to them or at them. Here we must recognize that our own background and training are likely to get in the way to make us perceive the world differently than our adult students do. Unless we are careful we could unwittingly look at their situations through the lens of our own biases and so misjudge their needs and expectations.

The climate which a teacher creates, individually and collectively, with students must include respect for their language patterns. Those patterns may not work well in the dominant culture but in their own settings they carry considerable utility and even force. We will blunder if we think that these language patterns are simple and easily mastered, or if we regard them as inferior or crude.

In fact, the perceptive teacher draws on the strengths of these languages. He or she knows that by using the students' own idioms and figurative language to illustrate important ideas, he or she can make those ideas clearer and more relevant to their experiences. Of course, we need to go much farther and help our students to overcome the handicap of possessing a language that is different from that of the dominant culture. In particular, they need to become aware of the language options available to them; in other words, to learn to shift from colloquial language and slang suited to informal conversation to more formal language, such as the language of a job interview or of a letter of complaint, as occasion demands. Our task, then, is one of educating our students in the perception and use of available language options in order to improve their ability to communicate with the dominant society. In practical terms this would mean equipping them not only to find jobs, but to cope with such complexities of daily living as consumer education, health education, and knowledge of government and community resources.

An important point that I have not touched on is that many adults lack the skills or tools with which to learn. This lack, and the anxiety it may engender, could be a

real obstacle to us in trying to convince adults of the value of learning. How are they going to accept our argument if they do not possess or even know about the skills needed? I mean such skills as listening intelligently (e.g., to grasp the major idea); locating, analyzing, and synthesizing information; making inferences and judgments; and so on. Incidentally, it is a fallacy to suppose, as educators sometimes do, that persons with limited verbal skills will exhibit a high degree of visual literacy. By visual literacy I mean an ability to discriminate and interpret actions, objects, or symbols, natural or man-made, that are encountered on television or films. Such skills include seeing relationships among ideas or events, whether these are presented in sequence or flashback; discerning intricate relationships among characters; sorting out the multiple and often hidden meanings contained in a visual message; distinguishing truth from falsehood especially in advertisements and political messages; perceiving implicit as well as explicit assumptions and value systems, etc. I raise this point as a warning to those who might be tempted to seize upon distance education as an easy solution to the problems of cross-cultural education.

It will be remembered that during our discussion of program planning, several references were made to the collaborative approach. This approach can also be applied to the teaching-learning transaction. Together teachers and learners can set goals, agree on the nature of the content to be covered, select the process by which goals can be attained, and set standards for evaluation. However, in pursuing this collaborative approach, the teacher must keep in mind that not all adult learners will be ready or willing to assume such responsibilities. Often they fear change and the demands placed upon them by teachers who do not always comprehend the anxieties felt by these learners in a new situation. These anxieties are compounded in those who have experienced previous failure in school and who associate learning with the unpleasant aspects of school, such as unsympathetic teachers, tests, low grades, and punishments.

Often they have a low self-concept which causes them to shrink from exposing their ignorance to others and to dread further failure. The physiological changes wrought by the aging process also contribute to difficulties in pursuing learning. These changes include deterioration of sight and hearing, some loss of energy and strength, decline of memory, and lengthening of reaction time. It must also be pointed out that with culturally different groups the aging process might be accelerated due to poor environment and poor nutrition.

Then there is the matter of learning styles with the categories of "field dependence" versus "field independence," "reflectivity" versus "impulsivity," etc. Whether culturally different groups display a greater or lesser degree of certain learning styles is not known. But the conscientious teacher will be constantly alert to differences in students' learning styles and make plans that accommodate them.

My final topic is cross-cultural considerations as they relate to research. My first comment is that there is a paucity of research on almost every one of the aspects we have been discussing--social-psychological and physiological characteristics, communication problems, program planning, and the teaching-learning transaction. I can say this with confidence having recently searched the entire DATREX and ERIC data bases. Most dissertations that I have come across relating to Hispanic and Indian groups have focused on the education of the child within the context of the school and family, but not on adults. The field is wide open for interested and energetic researchers who could follow one or both of two approaches. Qualitative research involves anthropological approaches such as the "grounded theory" approach developed by Glaser and Strauss and effectively used by Mezirow, Darkenwald, and Knox in analyzing urban ABE programs in their book Last Gamble in Education. Another example is the participatory

research described by Budd Hall, of the International Council on Adult Education, in his account of his work in Tanzania. As for quantitative research, there is a need for research beyond the descriptive survey type. More systematic and accurate data are required relating to some of the problems described in this paper such as self-concept, factors that affect participation, factors that facilitate or impede communication, the effectiveness of the collaborative approach in program planning and in the teaching-learning transaction, and so on.

I began this talk by remarking on early attempts to acculturate, or "Americanize," culturally different groups. Much has happened since then. The growing emphasis on human rights and the dignity of the individual has produced a new pride in ethnicity, a new determination to preserve their languages and cultures, even a reaching for political power. The call for us as administrators, teachers, and researchers is to inspire the members of these culturally different groups to reach their full potential. We can do so by providing for them rich and varied learning experiences keyed to their characteristics and individual needs and supportive of their aspirations.

CROSS-CULTURAL CONSIDERATIONS IN ADULT EDUCATION

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"The Professional Development Plan (PDP) at the Albuquerque Technical-Vocational Institute"

The Professional Development Plan (PDP) at the Albuquerque Technical-Vocational Institute was developed as a site-specific response to problems and needs which had been identified at this institution. The first part of the presentation today will be a slide program which will give you an overview of the institution, the problems which stimulated the development of the PDP, the general plan, content and operation of the PDP at T-VI. This presentation has been made at both the National Council of States on In-service Education National Conference and the Center for Vocational Studies, Ohio State University PBTE Conference this year. In both cases, it was identified as an exemplary program of staff development training. (Slide/tape program, script attached)

As you can see from the overview presented in the slide/tape program, the PDP is a plan of in-service teacher education and development which grew out of needs that our institution identified. This differentiates it from the pre-service model of education which is commonly used in teacher preparation and development programs. The PDP provides for:

1. certification needs;
2. professional instructional skill growth needs;
3. professional technical skill growth needs; and
4. continuing contributions to the profession, which is the leadership dimension of the professional.

How did such a plan come to be? What follows will be an attempt to pace you through, in a modified workshop process, some of the elements in the development of the plan as it came to be here at T-VI.

The first tasks involved the development of the plan and its subsequent approval. At T-VI this started with an ad hoc teacher committee which had been studying the problem of staff development as a part of our North Central Association Self-Assessment process. Out of this study grew a body of concepts which began to take shape as "the plan." The committee had identified the four dimensions of the plan to which I referred earlier. They wrote to a large number of similar schools in the country to determine what was happening in the area of professional development. They began to develop the format for various portions of the plan. Several discoveries were made as a part of this effort and study. It appeared that very little existed elsewhere which would assist the committee with its work. There was also considerable interest in what the Institute was proposing to do with the development of a PDP. The final discovery was that the Center for Vocational Studies at Ohio State University had already developed a system for identifying the instructional skills needed by vocational teachers and had already developed teaching "modules" to train teachers in achieving these skills.

Out of this set of materials was developed the first step in the system for development of the plan, phase one of the institutional needs assessment. This was quite simply the identification of instructor needs and characteristics. The bases for this assessment were the 100 modules which Ohio State had developed. These were found to be well-researched and fortunately had been developed along a Proficiency-Based model. This model paralleled what the Institute had already developed for student evaluation, the Proficiency Certificate. Therefore, the idea was not a strange one to instructors. Additionally, each instructor was requested to identify the technical skills areas which needed expansion or updating in order for that instructor to continue to be effective in the field being taught. I would add that most instructors feel, when they have been out of active participation in their own field of expertise for three to five years that they need to update their knowledge due to the rapid changes going on today in almost all vocational and technical fields. Additionally, T-VI instructors are encouraged to evaluate themselves using the plan which was developed by Jim Pollard at Spokane Community College, Spokane, Washington or through the use of student evaluation forms which are provided to them by the Institute. Of course there are administrative evaluations on a yearly basis for all instructors. All of these are part of assessing instructor needs and characteristics. When they are put together, the various needs identified, both individually and collectively, this becomes the basis for making decisions about the shape of the plan. This is a vital step in the process, and must be done at each institution individually, since these needs and characteristics differ from one school to another.

At this time I am going to have you fill out one of the forms which we use, the 100 Ohio State Modules. As you will note, these are color coded as to which ones we consider to be vital for the beginning teacher, which would be added as the teacher grows in instructional skills, and which would be developed if the person is to be considered a "master teacher." Please take a few minutes now to fill out the form for yourself.

The next part of the needs assessment is to identify student needs and characteristics. Most of us have student profiles which assist in carrying out this part of the assessment. It is vital to include the student needs, since the kinds of specific areas of growth which will be needed by the professionals to deal with these student needs will vary from location to location. Sometimes instructors have all of the "skills" for instruction, but are teaching to the wrong group of people due to their assumptions about what their students are like, what their educational, social, economic, and work backgrounds are. Even good teachers can look bad if they do not teach to the real students in the real world.

It is time to look at the institutional and community needs and characteristics. The sheets, which you are receiving, ask some of the questions which are vital to consider in this phase of the assessment. How much money can your institution devote to staff development? How much do you spend now? What are institutionally supportable activities for the professional growth for your staff? Answers to these questions give some direction to various elements which might be included or excluded from the PDP as it develops at your institution. What personnel expertise and capabilities exist now in your institution? With regard to the community: what industries operate within easy access of your institution? Is there a university close by through which you might work for some of the support systems? If not, what

assistance might you get through the State Department of Education, Vocational Education Division? What are the possible barriers to the development of such a plan at the institution, and are these critical? Can plans be developed to deal with these critical elements?

These and others are the kinds of questions which should occur to you as you look at your institution. They form the needs assessment phase of development. We found it to be vital to have the faculty committee continue to work with this development. As a matter of fact, we feel that the faculty committee has been one of the most positive factors in the success of the plan.

I want you now to get together by school groupings. Your assignment for the next ten minutes will be to identify in your school and community the factors which will be critical in your needs assessment. I will be available to answer questions.

Next the actual plan must be set up. You are receiving a copy of the State Board of Education regulation #78-5 which is the authorization for the development of the plan. You will note that the middle of page 3 contains that authorization under "option 3." This spells out what must be included in the plan and how the approval process proceeds at the state level. After becoming informed about what is required, and having decided what this means for you and your institution, it is time to consider faculty input. I have mentioned to you previously the work of the faculty committee. The issue which I will ask you to work on now for about three minutes is the identification of the leadership and structure of such a faculty committee in your school. Again, please work in school groups. Consider how your faculty is organized, whether it is advisable to use an existing structure or create a new one and who your key leadership people might be. This forms the basis for the establishment of your committee.

The next issue in developing the plan is to decide if you are going to work toward a final plan or accept the idea that a plan is always in draft state. We do the latter, since we have discovered there always seem to be new and positive ideas to include in the plan.

As a matter of fact, we bind our plan in loose leaf format to keep reminding us of its developing status. This is a philosophical issue for your institution to consider, but one which is vital in the development of the plan. If you decide on the transitional nature of the document, then it is necessary to decide how it will be rewritten and updated. This argues strongly for a continuing faculty committee.

Two other steps are probably needed at the local level to complete the development of the plan. The first is establishing an administrative review/approval procedure for the plan. We use this process here at T-VI. It provides for a good give and take relationship. Occasionally there have been ideas the committee submitted which the administration felt were either too expensive or not within the scope of the plan. They were sent back to the committee with comments. The administration has also requested certain activities to be included in the plan from time to time. Many of these have been seriously debated by the committee. In this process, a sort of continuing institutional needs assessment has been carried out and this has kept the plan more vital than it might have been otherwise.

Finally, the plan must be submitted to the State Superintendent of Public Instruction for approval. This process has taken from one to two months each time. This time allowance must be built into your implementation schedule for the plan if all of the other lead lines are to be met. We have received approval for our plan upon submission without any issues being raised by the Superintendent.

We will now look at the plan as it exists at T-VI. The index gives you an overview of how it is put together. This is Draft 10 of the plan which you are looking at which gives you some idea of the amount of rewriting that has occurred with the plan at T-VI. (A copy of the plan is attached to this script.)

Now that we have looked at the plan, we are ready to deal with the process by which it is placed in operation, the development and use of the Individual Professional Development Plans (IPDP's). Each instructor has been involved with the needs assessment process, which forms the foundation for each individual plan. At the same time the instructor is doing this, the supervisor is making a preliminary analysis of each instructor's needs. In order to give you some feeling for this part of the process, I want you to take the IPDP form in your copy of the PDP and fill out the plan as if you are an instructor. Please do both the first year "action plan" and the next three year projections. We will take about ten minutes for this activity. If you have questions, I will be happy to respond to them and assist you.

After the IPDP has been completed, the instructor and the supervisor get together and confer about what each has developed. During this conferencing the instructor's plan can be approved or revised by mutual consent. As the activities are carried out, completions must be documented. Forms are being circulated to you which provide for this documentation. Several persons are legitimate providers for this documentation: the immediate supervisor; other administrators; the resource person and/or the field resource person; the university personnel working with the project or other teacher training instructors. You see that it is essential for documentation to be provided in a consistent fashion, so that appropriate credit can be given to the instructor involved. Later during the operational year, if there are some unanticipated opportunities which come along, the instructor or the supervisor may initiate further changes in the IPDP, again by mutual consent. It is important that the administration and the faculty committee have agreement on this issue of changes, otherwise the plan could become rigid and nonresponsive to changing needs or opportunities. Some schools might have difficulty with this philosophy of change as legitimate for the IPDP, and it would be good to have serious discussions about your institution views concept.

Finally, at the end of the year there is an evaluation of the plan with the teacher and the supervisor, the development of the "action plan" for the ensuing year, and the addition of one more year to the three year projected plan. This is a significant occasion based on the documentation which has been done for the completed IPDP. It also provides a challenge for both instructor and supervisor to develop a continuing plan for professional growth. This concept has had lip service in education, but in the PDP process it is both an expectation and a requirement.

We have talked about needs assessment, and the activities, operation, and management of IPDP's. Now we shall turn to the support systems which have been identified as helpful to the operation of the plan. We did some floundering in this area in the early stages of our development. This was due primarily to our dependence on

the supervisor and the university consultant as the primary systems for supporting the plan and its implementation. These systems, while vitally important, were insufficient in themselves to deal with over 200 PDPs. It was determined that the Ohio State recommendation of a Resource Room had great merit. In our second year of operation we set one up. We collected all of the teacher training material we had available and put it in this center. This also became the office area for our university consultant. However, we were short on manpower to support and document many of the activities. At this time we sent one of the committee members to a conference in Spokane, Washington where he encountered the management system for professional growth activities which Jim Pollard had developed for Spokane Community College. We contracted with Mr. Pollard for a two-day workshop in the fall of 1979 to assist us in focusing on the issue of "resourcing." We had, by that time, designated a half-time teacher as "resource person" to assist instructors in carrying out their plans. We also began to develop a list of "field resource persons" to help carry out many of the immediate tasks to assist individual instructors with their various PDP activities.

Both of these resource functions supplemented the formal course work which was directed by the university consultant. The more formal teaching included classes, seminars and internships. Internships are for us what student teaching is to preservice education. However, the interns actually teach regularly assigned classes while field resource persons assist them and evaluate their performance. Coordinating all of these "resourcing" activities has made it possible to support the individual teacher in the accomplishment of their IPDP. You will find descriptions of the resource person and field resource person functions attached to Draft 10 of the PDP.

The university linkages have been most helpful. They have led to other developments as well. One of these has been the development of a Master's degree program in Secondary and Adult Education at the University of New Mexico. This program is now available, with a core of the courses being taught at T-VI, targeting the actual needs of our instructors and their instructional setting.

We have looked at an overview of the program via the slide tape presentation; the needs assessment process; the plan and its approval; the activities, operation and management of the IPDP and the support systems needed for the operation of the plan. Are there any questions?

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"The Reentry Woman in Higher Education"

Three days before Christmas, my husband Tom arrived home from work with an enormous box which he dropped at my feet in the kitchen. The huge letters across the sides of the box instantly conveyed to me what was inside. I squealed with delight. "A Microwave--for me?" "No," Tom replied. "For me. I'm tired of doing all the cooking." We carefully removed this soon-to-be boon to our lifestyle from its protective covering, cleared a place for it on the counter, and began to examine its myriad numbers, controls and gadgets. "It looks pretty complicated," I moaned. "Well," Tom confessed, "I didn't even get the top of the line. It looked so complicated that I figured you'd need to be an engineer to work it, and I wasn't about to give you a reason to go back to school again."

Since I completed my Ph.D. only a year ago, Tom and I know from first hand experience what being a reentry woman means. This short episode in our lives illustrates many of the results of the back-to-school movement of the last twenty years. We're experiencing a slight change in roles, certainly some shifts of values, and we readily acknowledge the difficulties and frustrations it has entailed. This is a complicated movement. Like any meaningful social movement, it has its benefits and costs, its champions and, if not enemies, critics, as it subtly--and not so subtly--changes direction over time. I would like to briefly review the history of this movement, share some research-based generalizations about the women who are the participants, examine some of the implications and raise some questions about our practices which arise from that history and research.

Let's turn the clock back to 1960--twenty years ago. Think for a minute where you were and what the educational world was like. I was a freshman at Chatham College, a woman's college, in Pittsburgh, Pennsylvania. When I selected Chatham, everyone in the St. Louis suburb, where I lived, thought I had gone crazy. Why would any girl want to go to a school with other girls? (The word "women" did not yet apply to us.) Wasn't college supposed to be the place where you got your MRS. degree? College was where we went after high school, studied something interesting (if you were a girl, you probably majored in education, home economics, nursing or liberal arts), were initiated into the world of beer parties, the Greek system, college football games and serious dating, for the purpose of finding a lifetime mate. Even though I quickly discovered that the same rites of passage were available at Chatham, I decided, at the end of my freshman year, to transfer to the University of Missouri where my high school sweetheart (who now brings home presents like microwave ovens) was also entering his sophomore year. I proved to all of my high school friends that I wasn't crazy after all. Three years later, in 1963, I graduated from Mizzou and was presented with a traditional senior portrait by the undergraduates in my sorority. There was Doe, in caricature, wearing cut-off blue jeans, Phi Beta Kappa and Mortarboard banners draped across her chest in beauty queen fashion, a bridal veil for a crown and a bride's magazine for a scepter. It was no secret that my attention was primarily focused on my upcoming wedding. I was very typical.

Higher education for women in the early Sixties was becoming increasingly popular, but even those of us who completed college before we got married thought little about careers or what our lives would really be like once we got married. We knew the answer. Even if we worked for a while after marriage (and many of us did), it would probably only be until we got pregnant. We would then live out our lives according to the script that we had written at our mothers' sides. Most of us had no idea what was really about to take place.

I don't know how much attention and fanfare the 1960 Minnesota Plan for the Continuing Education of Women (CEW) received when it was published, but today that plan is clearly recognized as the forerunner of what may prove to be the phenomenon which will rewrite the history of American higher education. The plan addressed the non-traditional needs of women at three different stages in their lives. It recognized that undergraduate women (understood to be students of traditional age) needed to be made aware of the different roles which they would fill during their lives--wife, mother, homemaker, community member, worker, professional, etc. The plan called for educational programs which would make these young women aware of the discontinuity in which these roles result, and an understanding that as new roles emerge and familiar ones change, continuing education would be a viable vehicle for developing the skills and understandings needed to fill these new roles. The second aspect called for a continuing education, non-credit curriculum for the young college-educated mother and homemaker. This curriculum would emphasize enrichment courses to fill her spare time with meaningful activity and provide stimulation which she might find lacking in her daily routine. Her routine, it was assumed, would be home and family-centered. Finally, the plan called for special counseling and courses designed to facilitate the mature woman's reentry into the work force in recognition of the fact that the college-educated woman, at 40 or 45, would find herself home alone all day, bored and even possibly depressed. (Senders, 1961, pp. 270-78) In 1960, this was innovative thinking. The idea that adult women were highly educable and might wish to return to college for any reason was incredible. Except for the veterans who returned to college on their GI Bills, adults simply had not been a part of the campus scene. And women--married women--coming back to school? Not quite science fiction, but innovative for sure.

The idea began to take hold slowly and then caught fire. In 1963, there were 20 programs identified as continuing education for women in universities, colleges and community colleges in the United States. By 1976, there were over 500. (Rue, 1976, p. 241) The rule of thumb is that educational innovations take about 50 years to take hold, so this was a phenomenal growth, indeed. I think it can be explained by understanding some concurrent movements which emphasized the need for continuing education for women and created an educational environment in which the early seeds could quickly flourish.

The first of these movements is, obviously, the women's movement. Ms magazine recently published a chronology of the 70's, which is called "The Decade of Women" (Steinhem, 1979, pp. 59-92). It reminded me vividly of how recent the women's movement is. The Senate began holding ERA hearings in 1970. (Steinhem, 1979, p. 60) Women didn't start discarding their bras until 1968 and bra burning was even later! (Steinhem, 1979, p. 61) Even Gloria Steinhem, the symbol of the women's movement, in my mind, commented:

> I was certainly old enough to understand these well-educated, white, upper-middle-class housewives who began to rebel in the Sixties against a feminine mystique that had kept them and their sisters locked out of professions and into the suburbs. Nonetheless, I not only felt little personal connection between their words and my own life, but was often put off by their emphasis on getting a piece of the existing professional pie; on bringing women, as the National Organization for Women put it in 1966, "into full participation in the mainstream of American society."...Only in the late Sixties when many women who had grown up in the peace or civil rights movements began to propose feminism--that is, an analysis that included all women as a caste and called for a transformation of patriarchy, not just integration into it by a few women--did my own feelings of recognition, empathy and hope begin to explode. (Steinhem, 1979, pp. 61-62)

So it seems that just as the first CEW programs were taking hold, the women's movement was also coming of age. The redefinition of that movement into a broad-based feminism in the late Sixties meant that that movement began to touch the lives of more and more women across the country, just as reports of these pioneering women's programs began to see publication.

The second movement which was blossoming during the Sixties was the adult education movement. As a formal field of practice within the educational world, adult education is quite young, even today. The first doctorate awarded in 1935, at Columbia, is now legendary. It wasn't really until the Sixties that we can claim to have come of age. Many of our literature's classics including Houle's Inquiring Mind, Johnstone and Rivera's Volunteers for Learning, Verner's Conceptual Scheme for the Identification and Classification of Processes of Adult Education--were published between 1961 and 1965. 1965 was the landmark year in legislation for adult learners. The provision of federal funds for adult basic education and for community outreach from higher education institutions moved adult education to a position--even though marginal--in public policy.

The later Sixties were years of rapid growth and expansion. Although adult education still operated from a marginal position, programs sprang up in all kinds of institutions and agencies. They were more and more frequently staffed with trained professionals who shared a basic philosophy. They believed that the purpose of these programs was to meet the expressed need of adult learners to facilitate their personal as well as their vocational and professional growth. Their practice was marked by an iconoclastic tendency to experiment with innovative approaches to meet those needs.

A third movement which appears highly relevant to our discussion is the community college movement. Community colleges trace their ancestry to junior colleges which were first established in the early 1900's. Although there was steady growth in both the numbers of institutions established and the number of students served during the first fifty years of the century, primary attention during these years was on providing the first two years of college work and/or terminal vocational training programs. Adult education received little or no attention until 1956 when the National Society for the Study of Education identified four purposes for the junior college: (1) preparation for advanced study, (2) vocational education, (3) general education and (4) community services. (Fields, 1962, p.71)

The decade of the Sixties saw dramatic growth and change in junior colleges. Five hundred new institutions were established and enrollments tripled. (Gleazer, 1973, foreword, p. 7) Institutions, once considered to be the territory of eighteen-to-twenty year olds, found an increasing number of adults enrolling in their programs. Indeed, by 1962, half of the students in these institutions were adults. (Fields, 1962, p. 47) Edmund Gleazer, one of the more prolific writers on the community college movement, observed that the junior college, by its nature close to and a part of its local community,

> showed promise of possessing an adaptive and responsive quality to new needs. These needs related to the concept of the word community which was more often modifying "college" in the name of these institutions. Historically, it could be said that first came the change in name, then came the conditions that pressed the college to become what the name stood for. (Gleazer, 1973, p. 227)

And so, in the late Sixties and early Seventies, we saw a new kind of institution emerge--an institution which provided accessible education to its local community and which included, as part of its mission, meeting community needs in their broadest sense. The pieces all fit together. The women's movement created sudden new needs for women; adult educators were turned in to these needs and willing to address them; the community colleges embraced such activity as an integral part of their mission. Continuing Education for Women was an idea whose time had come.

In 1970 in suburban Chicago, a women's program was born at Harper Community College. Like many of the early CEW pioneers, this "program" really consisted of just one course--Investigation Into Identity. Every semester, suburban housewives, frustrated by the lack of fulfillment they felt in their roles as wives and mothers, flocked to the college to learn how they could find their own identity in this new world. After several years, the college decided that a more concentrated effort should be placed on developing the programming efforts directed toward mature women who were now being recognized as a "target population."

At the same time, I was emerging from two years of counseling, with self-given permission to return to work to do some things I needed to do for myself (the bride magazines, you see, had not told the whole story). I became Harper's first Coordinator of Women's Programs and set out to develop a multifaceted program to meet the many needs of women like myself who were trying to find a new way to fit the pieces together. The program which we developed at Harper was quite typical of the programs springing up everywhere, and in Illinois at least, it served as a model for others which did not have the head start we had enjoyed. That one eight-week non-credit course was joined within 18 months by a score of one-day workshops on everything from "Women and the Law" to "Going Back to School." A dozen non-credit courses offered topics like "Career Development," "Women in Literature," "Interpersonal Communications," "Parenting," and a fledgling support system which included drop-in child care and a women's resource center. Over 1500 women participated in that first year. Clearly, the college had struck it rich and, it was my sincere hope, 1500 women were finding answers to questions they could now ask.

These early women's programs typically consisted of non-credit short courses and one-day workshops. Costs were kept as low as possible, though most programs had to

be self-sustaining (including administrative costs). It didn't take long for most of us in administrative roles to recognize the need for support services such as child care, counseling, testing, and even financial aid. Success in securing these services was frequently a function of the priority which the particular institution placed on the women's program. We worked mostly with white, middle-class, relatively well-educated women. While some eventually decided to return to work or to school, the primary focus in those early days was on what we might call enrichment. One young woman complained that she felt truly out of place in "Investigation into Identity" because she was a single woman and could not relate to most of the issues discussed. The lightning flashed and we realized that we had defined our clientele along stereotypical lines and were not addressing the needs of women who differed from that stereotype.

It appears to me that, in many ways, today's women's programs are quite different from those early efforts. To define women's programs as non-credit, enrichment programs would be a narrow definition which has little basis in fact. Even in the early days of the Minnesota Plan, there were other approaches to the continuing education of women, notably women's studies, which were (and are today) usually credit courses in the regular curriculum which focused on women's contributions to the culture. Some early attempts to facilitate the return to graduate study of particularly gifted women were made by Radcliffe College and several other institutions. Today we have to define continuing education for women in a very broad sense--programs designed to encourage and facilitate the resumption of study for women whose formal education has been interrupted. Our definition should include credit and non-credit, graduate and undergraduate, full and part-time study, vocational, professional, and liberal education. It should include programs identified specifically for women which may include support services as well as the less intentional phenomenon of older women returning to higher education regardless of whether any conscious efforts to recruit and retain them and offer specialized curriculum are made by the institution.

A new word has been coined as a result of all this interest in continuing education for women and it, perhaps, connotes the best definition for our purposes. We are talking about the "reentry woman"--regardless of her motivations, the path she chooses to reach her goals, or the institution which serves her.

Gordon in 1967 identified three types of reentry women at the University of California at Berkeley: those with "small goals" such as mastering a specific skill or gaining a special knowledge; the "shoppers" who have no clear idea of what they want, and the job or career-oriented woman who is preparing to return to work. Joy K. Rice (1976) characterized the reentry woman who has been the focus of women's programs as the "35 to 55 year old white, urban, middle-class housewife facing the 'empty nest syndrome' and the need to retool." But Rice acknowledged that more and more programs are finally looking at the career development needs of the woman who is already employed in the professions or in business and that a few programs have begun to focus on other racial, socio-economic or age groups. The research on reentry women, however, tends to perpetuate the stereotype because subjects tend to be the white, middle-class, urban or suburban women who are married or once married who have in fact participated in CEW in the past. Rice and others have pointed out that examination of women's education primarily in terms of how it relates to their traditional family roles limits the extent of our understanding and seems somehow inappropriate in light of today's changing life styles and life patterns. (1976, p. 243)

Understanding these limitations, what generalizations can be made about women who have participated in CEW as it has existed over the past 20 years?

First of all, she wants to return to work or get a better job. The stereotype of the bored housewife simply is not there when we look at the broad back-to-school movement. (Astin, 1976) Study after study affirms that the primary motivation behind the return to school for most women is to increase their job potential. Many of these women already have some college education and some work experience (O'Neill, 1977). Their previous college records tend to be superior, and their vocational orientation is usually better defined than that of younger students, even though it may be inappropriately defined. (Heckenhoff, 1966) There is conflicting information regarding whether or not the reentry woman is interested in pursuing a degree. It appears that whether or not there is motivation to complete a degree is related to the necessity of the degree in pursuing the desired vocation or career.

In terms of their views of family life and traditional role expectation, the reentry woman leans toward a non-traditional view but tends not to be in the vanguard of the women's movement. Indeed, the return to school seems to bring about more non-traditional life styles and values, not vice versa. It appears that the reentry woman may be very troubled by this shift. Krieger (1978) reported that all women in her study became less traditional in their role orientation six months after returning to school.

Suzanne Galler completed a fascinating study in 1977 which compared returning graduate students and their husbands with married, college-educated, community active wives and husbands. The values expressed by the student couples were modern: individuality and autonomy were high on the list. Their expectations of the satisfaction to be derived from family life were lower than the comparison group's. The women in the comparison group were oriented toward meeting the needs of others through traditional pursuits. The students, however, viewed themselves as self-oriented; and as they progressed toward the achievement of their academic goals, they expressed greater ambivalence about their motivation and personal orientation. They believed that their spouses really wanted traditional, home-oriented wives, and they realized that there was an increasing disparity between who they were and were becoming and this "ideal" role concept. In actuality, both the traditional and professional husbands expressed values which seemed to reflect the actual role orientation of their wives. The students' husbands, however, did not characterize their families as having open communication, cohesiveness, consideration and trust. Galler points out that these findings may suggest tension areas within the families of reentry women.

In Marian Krieger's study (1978), although the women became more non-traditional, a movement toward more traditional values and behavior was observed in husbands whose wives returned to school. These men did not compensate for their wives' additional responsibilities by assuming additional duties in the home. The change in values indicates a strong possibility that while such men might have been supportive of the idea of their wives returning to school, coping with the change that resulted from reentry had perhaps proven to be difficult.

These studies cause me to think that the reentry woman may be caught in the middle of a tug of war. On the one hand, she desires the occupational upgrading and personal enrichment that continuing education affords. As she embarks on her studies, she experiences a sense of satisfaction, achievement and self-worth which support

and encourage non-traditional values. On the other hand, the increased pressure on her time and energy, her awareness of the need to compromise her traditional role expectations and--let's say the word--her guilt about placing her needs above the perceived needs of her husband and/or family mitigate against her pursuit of her original goal.

The resulting conflict may be strong enough to cause her to discontinue her study. In a study of factors affecting attrition, Reimal (1978) found that women over 40 and those with incomes under $15,000 persisted better than younger women and more affluent women. This is not too surprising as family-related pressures would probably be less for the older women and the economic pressure (and therefore, perhaps, the family support) greater for the lower income group. He also found that students who told their troubles to friends were more likely to discontinue.

This, at first, seems to be a strange finding. We tend to think that by telling others our troubles we can garner support for our decisions. Having been in the role of the reentry woman, however, I know what is likely to happen when the overburdened, frustrated woman who is exhausted by the juggling act she feels she must perform unburdens her troubles on her friends. They attempt to convince her that she is doing this to herself, that her goals are inappropriate and that she ought to thank her lucky stars that her husband doesn't walk out on her. You see, the role which she is abandoning--or at least changing--includes her relationship with her friends as well as her family. She is no longer part of the coffee klatch or bridge group. She's not available to watch the kids after school when her neighbor goes to the doctor. Worse yet, she may even have asked her neighbor to run over and check on Tommy who's in bed with a sore throat while she's at the college taking an exam.

It has been pointed out that going back to school is a psycho-social process (May, 1977). The student role is learned while the previous roles are simultaneously modified where they compete with the necessary student behaviors. For the reentry woman, this entails a sense of loss, a sense of adventure and, for the persister, a final integration into a new identity. But for the significant others--husband, children, mother, best friend--too often there is only the perceived loss.

I would venture a guess that the reentry woman who has a deep commitment and strong motivation to her educational goals will keep her troubles to herself, or that the reentry woman, who has been able to develop a new peer group which shares her values and her experiences, finds that her troubles are neither unique nor unsolvable. In fact, they may be minimized by sharing responsibilities with these new friends. We have tried to play down the notion that it takes a superwoman to return to school (or work, for that matter). This superwoman can still keep a spotless house and crisply ironed children, get straight A's, can entertain husband's top business client with a gourmet dinner complete with fresh flower centerpieces, can always be counted on to bake cookies for the PTA bake sale and teaches Sunday School as well. We have encouraged women to realize that it doesn't take a superwoman to handle such pressure and demands--that she can return to school and be successful. Well, I'm not so sure that it doesn't take a superwoman. I know that the first time many women express their concern about their ability to handle all of these responsibilities plus school, the significant other whom they tell will sympathetically listen and then say, "Yes, it was so much better before you went back to school." The evidence implies that the reentry woman who succeeds does so because she must do so or because she is indeed a superwoman.

In recognition of these demands, a great deal of study has been done to identify the barriers which prevent women's return, or continuation once she has returned or, to put it another way, the services which are seen as important to facilitating reentry. There is near unanimity in the findings, and I can summarize them rather succinctly. Frequently cited barriers include: family responsibilities including child care, transportation, cost, personal feelings of inadequacy, husband's and/or family's negative attitudes, conflict with job responsibilities, college restrictions. (Smallwood, 1977; Tittle & Denker, 1975; Lyman-Viera & Boggs, 1976; and Berry & Epstein, 1963) Dating back to the Minnesota Plan in 1960, colleges and universities have attempted with varying degrees of success to minimize these barriers with support services geared toward women.

Child care services, though often limited and restrictive, are perhaps the most commonly instituted services. In the early Seventies, child care at college was highly innovative, and newspapers would run feature stories about little Tommy going to college with his mom. The first time we offered child care during a workshop at Harper, we enrolled 65 women and 82 children! Today, the new woman student can more reasonably hope that child care will be available in some form on campus. Approximately 25% of the colleges and universities do operate some kind of child care facility, but many more are needed. (Rice, 1979, p. 104)

Alternative forms of delivery which enable the reentry woman to better "fit" study into her other responsibilities are more and more typical. Short courses, concentrated formats with longer but less frequent meetings, evening classes, weekend college, guided independent study, credit for life experience and CLEP examinations are examples of institutions--most frequently with prodding by adult educators--doing some of the adjusting.

The personal needs of the reentry woman, her ambivalence about her changing roles, her need for emotional support and her often unfocused vocational interest, require the availability of competent counseling and career guidance. O'Neill (1977) identified "sympathetic counselors and supportive peers" as the most critical element in women's programs and related her finding that the reentry woman who has a clear and reasonable goal and understands her options frequently has little need of special support services. This would explain why all women do not seem to need counseling; those who have clearly defined objectives and little personal ambivalence are able to reenter with greater ease.

The need for supportive peers and for identifying with a new, compatible peer group can be addressed by a special women's center or lounge on campus, and other socialization mechanisms specifically geared to the adult student. (O'Neill, 1977; May, 1977) Since most reentry women rush home after class to do the laundry, they have little opportunity to build those critically important peer relationships outside of class. An adult student lounge can provide a meeting place for between class coffee or lunch.

Many reentry students express their concern over their ability to compete academically with younger students. While the evidence suggests that, in general, these fears are unfounded, study technique workshops, refresher courses and library tours can be a boon to a hesitant student's self-concept and feeling of readiness. Reentry Student Offices often coordinate a special, simplified registration procedure which sometimes eliminates the need for previous transcripts. A creative idea

(which admittedly would take a creative administration) would be to enable the student to enroll in one course at a reduced fee, thus providing the reluctant student with a chance to "try out" university study. At the conclusion of the semester, the student could have the option of electing whether or not the course should be placed on a permanent transcript. I would be willing to guess that most students would be pleasantly surprised and eager to not only list their course but to quickly follow up the successful experience with regular enrollment.

Placement offices ready to work with reentry students may not remove barriers to reentry, but are certainly a marketable aspect which may help the vocationally-oriented prospective student decide to enroll. Placement for the older graduate is quite different from placement of traditional age graduates. Assistance in preparing resumes which effectively communicate valuable paid and volunteer experiences from a discontinuous life pattern is badly needed. Not all placement officers know how to do this. The reentry student is usually not mobile--job possibilities within the local area are the only feasible options. This means some creative examination of job openings to determine whether or not they meet the woman's criteria and encouraging women to develop some flexibility regarding their job requirements.

Two areas in which successful support is more elusive include financial aid and the need for faculty role models. In 1974, I testified at a legislative hearing on the need for financial aid to part-time students, which at that time was non-existent. While some aid is now available to students with financial need who carry six credit hours, there is, to my knowledge, no organized, government-supported program for students in noncredit or for those who are carrying fewer than six hours. Financial aid offices need to be aggressive in finding ways to help the reentry woman pay her way--particularly as we attempt to reach out to poor women and single women who are heads of households. Loans, grants, fellowships, and part-time employment all should be pursued, and the reentry woman often doesn't even know what questions to ask. In community college districts, local organizations might be a source of scholarship funds, or special community fund-raisers might be held to generate a source of aid for part-time students with financial needs. It appears that we'll have to forget about any significant governmental assistance in this area for a few years and be creative and resourceful if this barrier is to be diminished.

As the reentry woman goes about creating a new identity by merging her past and current roles, she needs frequent feedback regarding her academic success. She needs to feel acceptance in the student role. Supportive faculty and administrators who can also serve as role models of successful women--even women who have combined family, educational and career responsibilities--are an important part of the process. (May, 1977) Unfortunately, there aren't enough women who fit that prescription. It seems to me that a real service can be provided by administrators and faculty in women's programs. They should create an informal system of women within the institution by generating an awareness among them of their potential for positively influencing the growth of the women they will encounter in their classes. Hopefully, the time will come when there will be more women in such roles and when there will be less of a need for them to serve as models. Until that day, however, access to that kind of influence must be made more readily available to those who seek it and would benefit from it.

Suppose that you have already developed a woman's program with the kind of support services which have been mentioned. There is one more piece of the puzzle. The

existence of these services must be communicated, not only to the women on campus, but to the community at large. The research data we have has primarily focused on women who have already reentered college, but what about those who have not reentered? A socio-economically stratified survey of residents of a community college district in California indicated that over 75% felt that the kind of educational opportunities usually available in women's programs were needed by women. Over 40% of the respondents expressed interest in taking classes at some time in the future (though few had specific enrollment plans) and nearly all of the specific courses cited were already in the curriculum. (Lymen-Viera & Boggs, 1976) Mildred Bulpitt, writing in Community College Frontiers in 1977 challenged community colleges to offer women students more than traditional avenues to reach their goals and then actively recruit them.

It seems fair to ask, where do we go from here? Joy Rice (1976) has identified--and criticized--four assumptions on which CEW programs have been built. Our response and reaction to these ideas and some related questions which I'll pose could provide the sense of direction for the future.

Rice points out that CEW programs are based on four assumptions: (1) a discontinuous educational and employment pattern for women; (2) accommodation to prevailing social roles and norms (helping women adapt rather than challenging and changing those norms); (3) a separatist rather than a non-separatist view of education for women; and (4) a remedial, rather than a preventive, approach to the social situation which is the cause of women's distress.

Regarding the first assumption, i.e., the discontinuous educational and employment pattern, there is evidence that traditional life patterns are rapidly disappearing. A frequently cited statistic is that 9 out of 10 women will work at some time during their lives. We are also discovering that the more education a woman has, the more likely she is to pursue a career. Childbearing is being postponed, and childrearing is less and less frequently a full-time pursuit. The dual-career family is now a recognized reality. The question we need to ask is, if the discontinuity on which reentry programs were built is becoming a myth, what will the educational needs of reentry women--many of whom will not be seeking retooling for resumed employment--be in the future and how might this affect our curricular approaches in such programs.

The second assumption, regarding accommodation versus change, reminds me of a conversation I had in 1974 when a professor questioned the value of the Women's Program at Harper. He pointed out that we were treating symptoms and doing nothing to attack the cause of the problem. I replied that when someone was hit by a car in front of my house, it was critical to stop the bleeding. Certainly one should treat the injury before calling the traffic department to study the speed limit. I knew this was a transitional stage. I also recognized that in 1974 one did not openly acknowledge that one was out to change the historical value system which has resulted in non-parallel lives for men and women in a Congressional District which had been represented for years by the most conservative member of the House of Representatives.

Today's question is: Are we still approaching CEW as an interim approach, or have we been fooled into believing it is the answer?

The separatist issue centers on at least two phenomena: First of all, as women change, men also must change and very likely need assistance which is not very different from the support offered to women through CEW programs. Secondly, not only is the discontinuous employment pattern for women fading, the continuous, steady pattern of a young man starting at the bottom and working his way up through the company to receive his gold watch is becoming less and less typical. Men seem to need career guidance and support for job changes just as much as women. Those who have recognized this tend to promote programs of special curriculum and support for all adults, not just women.

I think there is one other perspective that has to be considered. I learned at Chatham College that when women were alone in a classroom, they could express themselves articulately and powerfully; they could be innovative and creative; they did not compete with each other but could be collaborative. They did not risk their femininity by being bright and productive. At Harper, I found that adult women experienced a real difference in women's education as opposed to co-education, which had been the norm for most. There was a real reason for separatist programs--women grew in unimaginable ways when they didn't have to deal with the male/female issues to which we have all been socialized.

All of these issues raise the question: If discontinuity is a myth and women don't have special needs, if the ultimate aim is equal integration of women into a world of new norms--do we in fact still need separate programs?

Rice points out that the women who were raised in the Fifties and traveled through the Sixties when most of the rules were challenged are caught in the middle of the turmoil. Our Women's Programs have been admittedly remedial, and the question we need to ask now is, what about younger women? Will they have the same needs as today's women or has the new world arrived for them during their formative years so that our current approaches may be irrelevant? The data isn't in yet, but evidence indicates that the new world still requires a rather jolting entry sometime in young adulthood. Peer pressure in adolescence and the preoccupation with present goals "often nullifies attempts by adults to increase consciousness about future choices." (Rice, 1976, p. 248) Institutional and organizational barriers to young couples who do wish to implement shared role lifestyles abound--clearly, it is easier said than done. Our question: What ought we to do to create a preventative model?

I don't have the answers to any of these questions--I know only that I believe today, as I did in 1973, that our world will be a richer place if all people, men and women, have the freedom to pursue their dreams and utilize their talents as they, as individuals, see fit. The place that CEW --as a movement, as a process--has in creating that enabling environment has been significant. What it will be in the future may very well depend on how each of you answers those questions.

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"A Practitioner's View of Improving Instruction
in Adult Vocational and Technical Instruction"

I am pleased to be with you this evening to discuss how a practitioner views the various ways of improving instruction in adult, vocational and technical education.

For those of us who were involved in the early development of the community college movement, we found that those days of long ago brought us multitudes of traditional eighteen to twenty-one year old students seeking education for education's sake. Now that we are entering into the 80's we are seeing a change in our student body. According to the National Center for Education Statistics, more than 18 million people or 11.8% of the total adult population are presently enrolled in adult education programs. The 1978 Bureau of Census survey indicates that 15.7% of adults ages 17-34 are taking courses and furthermore 13% of those 35-54 and 4.5% of those older than 55 years are also enrolled in adult education programs. This same survey indicates that adults with more education tend to continue their education, which is not surprising for those of us in the trenches. The most interesting finding from the study was that 39% of those studied indicated their main reason in continuing their education was for job advancement. This seems to indicate that adult vocational education has a bright future in today's society.

This growth has been evidenced in the increased numbers of students enrolled in adult vocational programs at Rock Valley College. The enrollment figures for this academic year have increased by 7% over a period of one year ago. The largest growth took place in the vocational programs especially business. On the other hand, adult-continuing education programs grew by a startling 26%. The average age is now 33.1 in adult education, 25 years in liberal arts and vocational-technical areas and 27.4 overall as stated in the spring 1980 student profile. In addition to our students aging, we also find the ratio of males to females has changed. During the 1970's males made up the largest number of students; in the 80's the females have now taken over that statistic.

In the March 31, 1980 edition of the Chronicle of Higher Education two scholars, Breneman and Nelson from the Brookings Institution, predict that community colleges will have a hard time in the 80's. They cite the following three reasons for their prediction, and I quote:

1. "Community colleges are likely to lose some of their full-time, transfer-oriented students to four-year institutions that recruit aggressively."

2. "The number of adult, part-time students may not continue to increase because of saturation of demand, (because of) effective competition from other sectors, or because of the unwillingness of local, state, or federal governments to subsidize such education."

3. "Taxpayers may resist increased financing for adult, remedial instruction, preferring instead to concentrate resources for that purpose in the secondary schools."

"Mr. Breneman and Ms. Nelson write that 'vocational-technical programs seem reasonably secure but there is a risk that the comprehensive community-college mission may be lost with the colleges becoming essentially technical institutes."

With this in mind, we, as educators, must take a hard look at our methods of instruction and develop, improve and implement our instructional techniques. We simply must become more aggressive and better salesmen of education.

Some of what I have to say may seem redundant, but bears repeating because we often ignore, forget, or even take it for granted that the students and instructors understand each other when, in fact, in many cases they do not even know each other.

First of all, as instructors you must familiarize yourself with the names of all your students. This will be to your advantage at the first class meeting when you pronounce their names correctly. A suggested method of breaking the ice at Rock Valley College is an informal question and answer period in the oral and written format. This process helps to reduce the fears of the students that are coming to us for the first time as well as the seasoned student. Far too often we see the learning process as only a receiving process by which the student acquires the knowledge, skills and understanding from the expert. Learning is more than just a barrage of information upon the students. It is a channeling process that the students must direct to achieve the goals they have set forth.

The learning experience must be personally meaningful if the students are to get actively involved in determining their objectives and the educational strategy that best suits their stated goals.

We educators must assess the student upon entry as well as knowing where they are going. The short informal survey can act as a pretest which can aid us in the selection of the proper instructional delivery method.

An example of how this can be accomplished is by the use of a short lecture followed immediately by discussion relating to their real life situation. For instance, when teaching a class on the materials of industry,and the subject matter relates to a combination stress condition of tension and torsion, it can be easily understood when comparing the theory to the applied stress condition present in the fastening of two materials together using a bolt and nut.

As an administrator of adult vocational and community programs, I am amazed at how many instructors seldom do anything to reduce the physical barriers between themselves and their students. We administrators can give many suggestions, but when it comes down to the implementation stage that's when the instructor goes into the classroom and closes the door. It is then up to that instructor to insulate and recite or totally involve yourself in the teaching-learning process.

How can this be accomplished, you ask? First of all, I must assume that each of you have a thorough understanding of the learning process that has been discussed at previous conferences provided by this University. The barriers to successful learning can be as simple as the way you enter the classroom to as complicated as the manner in which you present your lessons.

Let us examine some of the methods that improve the learning-understanding and interest of your students in today's adult vocational and technical education areas.

As the instructor, it is your responsibility to plan, organize, present and evaluate the materials that are relevant to the subject matter being taught. To paraphrase the football coaches, "The best offense is a good defense." In our classrooms we can

lose the entire class within the first two minutes by not being prepared. The students of today are extremely bright, inquisitive, and eager to learn; however, the instructor that thinks he can fake it or fills the time with amusing anecdotes is sadly mistaken. The result of such an ill-prepared instructor is that the students then decide the outcome by voting with their feet. That is to say, if you had students at the first meeting but not the second, the students have voiced their opinion of your teaching style. So take the first step by taking the time to prepare before meeting your class and the payoff will be enormous.

The second step is to organize your presentation in such a manner to allow the students to use all of their five senses. The student should hear the lecture, see the visual aids, touch the laboratory exercises, taste and smell the subject. The more ways the students can involve themselves in the educational process the faster they learn and their ability to retain the material will be improved. To help clarify what I mean, let's look at a teaching situation involving a group of recruit firefighters in how to attempt the correct rescue technique from a second floor of a burning building. An instructor can talk about the technique until he's blue in the face. We have found that a better method of instruction is to outfit the recruits in turnout gear, set a lifeline, and send them into a controlled burning second floor training facility. It is remarkable how fast recruits learn the correct method of rescue when they have used all of their senses in the learning experience.

The presentation of the subject should incorporate all the teaching aids that are available, assuming of course dollars are unlimited, and we all have that luxury. The use of learning aids are especially important where they relate to real life situations. It is important in the purchasing of aids that we replicate as close as possible the actual devices used at the real job site. As instructors, work with your administrators to recommend the correct training aids and not what fast talking salespersons think are the answers to today's educational training issues.

In addition to the usual chalkboards, overhead projectors, and films, expand your knowledge of other training aids such as live situation, videotape, outside experts, combined use of two-way computer assisted and teleconferencing networks. To achieve the mastery of using unfamiliar aids and techniques enroll in a methods and media class for improving instruction. Before you venture into this sea of electronic hardware, learn how to operate the equipment and, most importantly, do not solely rely on the equipment for your total instructional experience. Unfortunately, hardware breaks down so you must be prepared to rely on your old tested teaching skills.

In getting the most out of expensive training aids a common mistake must not be overlooked. The physical environment that is conducive to learning is extremely important. It is not how architecturally beautiful the facility is but how adaptable it is for learning and instruction to take place. At Rock Valley College we have a very lovely campus with a winding creek, tall trees, and lush grass. The buildings are very picturesque and provide a conducive environment for learning. On the other hand, we have training facilities in an old farm machinery factory built in the early 1900's. Each campus location has its own character and the bricks and mortar which provide the space for training. This combination of physical plant, training aids, and faculty can produce skilled students that are the backbone of our communities. Now that we have established that the physical structures can be adapted for the educational process, let's take a moment and look into a typical classroom. I'm thankful that most of us are beyond the days of having school chairs nailed to the floor in nice straight rows. I think it only made the janitor's life easier.

When we speak of barriers to the learning process we must take into account the classroom arrangement. If your teaching style is one of interaction, then move the furniture to promote the desired behavior. Plan to have the necessary creature comforts available such as ashtrays, coffee, and furniture for adults. This can be a real problem when classes are offered in rented schools designed for the younger generation. All of those extras will break the ice on that first night that is so dreaded by both teacher and student. Along with the physical arrangements of the furniture become aware of the lighting in the classroom and laboratories. As we all know, the older we get our visual ability tends to decrease; with this in mind check all the light bulbs before the class meets. Avoid distractions created by disorganization of the teaching area, outside noises, and windows. This can be accomplished by rearrangement, shades, and closing the door. In addition to sight, we must be cognizant that hearing is sometimes also on the decline so speak up and be heard. Lastly, in this time of Federal mandates on room temperature for both air conditioning and heating, make sure that you inform your students of the regulated building temperatures so they can make the necessary wardrobe changes before the next class meeting.

If you desire a deeper look into physical environments as it relates to adult learning I recommend you acquire a copy of Sally White's text noted in the reading list.

In 1976 John Holden, Director of the Graduate School of the United States Department of Agriculture, stated that every worker must be retrained five to six times during his lifetime if he is to make a full contribution to the economy. This indirect challenge to each of us as adult vocational educators is a reminder for us to tune-up ourselves to improve our instructional techniques. Adults involved in the learning process are highly motivated and self directed. Their commitment to learn lends itself very nicely to contract learning which for the most part is frightening to the younger student.

The adult student knows what he or she wants and how to get it. Implement contracts, encourage individualized instruction and incorporate as many teaching techniques that are available to you. This will insure that each and every student who comes to your classroom leaves with more than he came with and has moved toward the attainment of his specific learning objectives.

By incorporating one or more of the following twenty-three methods outlined by Richard Etheridge of Mississippi State University, one may achieve the desired student learning experience:

1. Audience Reaction Team
2. Brainstorming
3. Buzz Session
4. Case Study
5. Colloquium
6. Committee
7. Conference
8. Convention
9. Discussion Group
10. Demonstration
11. Field Trip or Tour
12. Forum
13. Institute
14. Interview
15. Lecture or Speech
16. Listening Team
17. Panel
18. Question Period
19. Role Playing
20. Seminar
21. Short Course
22. Skit
23. Symposium

The use of these various methods may be the technique needed to spark a student's interest who otherwise might drop out of the class either mentally or physically.

Earlier this year I took an informal survey of a technology class I teach. I might add that as an administrator it is rewarding to get into the classroom as a teacher. This survey was directed at first and second year technology students. The question asked was, in their view, what did they consider as the five best instructional methods that helped them excel in the learning process. The interesting result is that the majority of the students listed an effective instructor as their first choice, continuous oral feedback second, discussion third, active participation fourth, and the fifth being K.I.S.S. or keep it simple, stupid. There were other methods mentioned; however, it seems from this informal, non-scientific survey, the students were saying something to us and it is up to us as instructors to listen. Maybe if we could choose the best method of improving our instructional techniques the choice would be listening on the part of both student and teacher.

As we sit here this evening most of us are thinking along the lines of the traditional educational process. Let's, for a few moments, discuss an alternative to the traditional delivery system.

New Mexico, like many other states, has the urban and rural populations to serve with its educational networks. Your state with its four or five major metropolitan areas has the advantage of being serviced by excellent institutions of elementary, secondary and higher education. However, a problem exists as in many areas of your state and our country of geographically isolated residents. As we all know, with the tight money and inflationary period, educators must provide the best education possible at the most economical and efficient way ever devised.

During the past several years Rock Valley College has been working with the Rockford Fire Department to address the training needs of firefighters in the greater Rockford area. Administrators find that scheduling classes on traditional time patterns for firefighters will not work; also, teachers too are finding out that conventional lesson planning and teaching techniques often do not work.

In 1975 the Rockford Fire Department and Michigan State University entered into a joint project to design, operate, and evaluate a two-way cable television teaching system. The project uses cable television, a mini-computer-controlled switching and scanning process to provide automated interactive instruction for Rockford firefighters in their own stations throughout the city. The firefighters would log in with preassigned individualized code letters; the feedback was immediate in that the codes appeared on the television screens in the stations. As the lesson proceeded the firefighters would answer a series of questions and their answers would appear on the screen as well as their composite score. The entire program was automated, once a video-cassette was started, from log in to scoring.

The training experiment compared one-way television instruction to the two-way instructional system. In both conditions the firefighters received the same materials and questions. The 100 firefighters in the two-way interactive television method learned more from the twelve lesson series than did the 100 firefighters in the one-way no feedback method. After six months both groups were tested and the two-way interactive participants were still superior to their one-way counterparts. The fire department is presently using the two-way system to train on the job firefighters in the various fire tactical areas. The complete results of this project can be obtained from either Thomas Baldwin, Department of Telecommunications, Michigan State University, East Lansing, Michigan, or from Chief James Cragan, Rockford Fire Department, Rockford, Illinois.

Some of the problems encountered with this delivery system are the cost of renting the cable television lines as well as the equipment cost and upkeep. The approximate cost per year for this system is $32,000 as estimated by Rockford Fire Department personnel.

Recently a much simpler and less expensive system has made its entrance into the instructional arena. During the past several years Wisconsin's Statewide Extension Education Network, also known as SEEN, has been providing educational programs for the geographically isolated resident throughout the state. At the heart of this system is a piece of electronic hardware known as a "Meet Me Bridge." The residents can take advantage of this system by simply picking up their telephone and dialing the access number. When this is done they are immediately connected to the teleconferencing bridge and are able to access the instructional programs they desire.

The success of this type of instructional delivery system has triggered the interest of Rockford's educational and governmental agencies. During the past six months the Rockford Fire Department has purchased and installed the electronic hardware for the training and tactical use by the firefighters.

I would like to explain how the system works and in a few minutes we will dial into the Bridge in Rockford so you can interact with some recognized leaders in the field of adult education.

The system consists of ordinary telephone lines, telephones, conveners, and the Meet Me Teleconferencing Bridge. The conveners are nothing more than voice activated microphones that are electrically wired with a speaker assembly that in turn is wired via telephone lines to the Meet Me Bridge console.

Teleconferencing is a term used to refer to meetings or instructional sessions conducted via telephone lines between two or more groups of individuals physically separated. The system is of relative low cost after the initial purchase of hardware. When using telephone company lines there are no dedicated line costs incurred other than toll charges for long distance calls. The old method of conference calls had to be operator assisted that took long periods of time to make the connections and the quality of the transmission was normally not the best. In contrast, the Meet Me Bridge system allows up to twenty different locations from anywhere in the world to call into the Bridge at a predetermined time and instantly all are electronically connected.

The system can break the conference from one into four separate conferences with a push of a switch. The Bridge can be operated by a person or set to operate automatically. To insure clear, non-static conditions during the teleconference the Bridge is equipped with adjustable controls to remove any interference. This equipment, manufactured by Darome, Inc. of Harvard, Illinois, has a one-time cost of approximately $40,000. The yearly rental fee for telephone company lines is around $2,500. As you can see, there is a significant cost difference between the two-way computer assisted and the Meet Me Bridge systems.

The Meet Me Bridge system is compatible with most instructional programs with the addition of audio, slow-scan television, electronic blackboards, electronic tablets, audio and video cassettes and a Q.W.I.P. system for the transmission of printed material.

This system allows students who would never see your classroom to become involved in the learning process. The system forces the instructor to better organize the material that is to be presented. The availability of immediate feedback in the audio and visual format keeps you informed on how each student is progressing. The system allows you to engage the services of experts to present information and discuss solutions to problems without leaving their homes or offices. The administrators and conference planners can use the system to reduce the high cost of putting on conferences and institutes. It is an excellent means of providing continuing education to the various health professionals and others. Major businesses and industries are using the teleconferencing system for training, meetings and day-to-day business matters. This system is not the solution to all the instructional improvement and delivery concerns; it is, however, another means of providing and involving the isolated adult student in the educational process.

I would like to conclude with this thought. For instruction to be improved at the local level, it is up to you to seek out all the methods, equipment, and techniques that will aid you in the educating of all persons.

Thank you for this time we had together.

This evening I have arranged a demonstration of how a teleconference works. Tonight joining us for a brief discussion on instructional improvements via the teleconference will be:

Dr. Violet Malone, University of Illinois, Urbana, Illinois
Dr. Robert Mason, Northern Illinois University, DeKalb, Illinois
Mr. Lou Appel, Darome, Inc., Harvard, Illinois
Dr. Robert Smith, Northern Illinois University, DeKalb, Illinois
Mr. John Jung, Rockford Fire Department, Rockford, Illinois

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